

FEDERAL AVIATION REGULATIONS



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION-WASHINGTON, DC

CHANGE 15

EFFECTIVE: MAY 4, 1998

Part 135—Operating Requirements: Commuter and On-Demand Operations

This change incorporates Amendment 135-70, Commercial Passenger-Carrying Operations in Single-Engine Aircraft Under Instrument Flight Rules, adopted July 31, 1997 and effective May 4, 1998. The following sections have been revised by this amendment: 135.101, 135.103, 135.163, 135.181, and 135.421.

The revised or added material for this amendment is added in bold type after the current section. Bold brackets appear around the revised or added material. The amendment number and effective date of these changes appear in bold brackets at the end of each affected section.

SFAR No. 81, Passenger-Carrying Single-Engine IFR Operations, was added by this amendment but will not become effective until the FAA publishes in the *Federal Register* a document specifying the effective date.

Please make pen and ink changes on the following pages in the SFAR portion of Part 135: Pages S-111 and S-112 (Change 11) should read S-110-1 and S-110-2; and pages S-123 through **S-143** (SFAR No. 78, Change 12) should read S-125 through S-145 consecutively. SFAR No. 81 will be inserted as page S-147. Sorry for this inconvenience.

Page Control Chart

Remove Pages	Dated	Insert Pages	Dated
P-877	Ch. 14	P-877 through P-891	Ch. 15
Subpart B	Ch. 13	Subpart B	Ch. 15
Subpart C	Ch. 14	Subpart C	Ch. 15
Subpart J	Ch. 12	Subpart J	Ch. 15
		s-147	Ch. 15

Suggest filing this transmittal at the beginning of the FAR. It will provide a method for determining that all changes have been received as listed in the current edition of AC 00-44, Status of Federal Aviation Regulations, and a check for determining if the FAR contains the proper pages.

Internationally, commercial operators in several countries have sought permission to conduct passenger operations in IMC with single-engine aircraft. Canada, following a cooperative effort with the engine manufacturers, aircraft manufacturers, and users that produced a well-documented case, has allowed SEIFR passenger-carrying operations in turbine-powered airplanes since February 1993, with a number of specific requirements for equipment and training. Other countries are also considering permitting SEIFR passenger-carrying operations.

In response to the petitions, the Canadian action, and changes in technology that have resulted in increasingly reliable engines and aircraft systems, the FAA asked its Office of Integrated Safety Analysis to conduct a study to determine if demonstrable differences exist between single- and multi-engine aircraft in visual meteorological conditions (VMC) and IMC. The study, *Part 135 Single-Engine Instrument Flight Rules Operations in Instrument Meteorological Conditions*, February 24, 1994, (available in the docket) reviewed the basis for the Canadian action and available data from a number of sources on powerplant/systems reliability and activity exposure data.

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Prior to the Alaska aviation study, the NTSB conducted a study of emergency medical service (EMS) helicopters because their accident rate was twice the rate experienced by part 135 on demand helicopter operations and one and one-half times the rate for all turbine-powered helicopters. For the report, *Safety Study-Commercial Emergency Medical Service Helicopter Operations* (NTSB 1988), the NTSB investigated and evaluated 59 helicopter accidents in the rapidly growing commercial EMS helicopter industry. The Board determined that marginal weather conditions and inadvertent flight into IMC remain the most serious hazard that VFR helicopters encounter. "The Board believes that although the IFR system is not designed optimally for IFR helicopters and that the nature of the EMS helicopter mission further complicates this problem, the safety advantages offered by IFR helicopters flown by current and proficient pilots are great enough that EMS programs should seriously consider obtaining this capability."

The Alaska Air Carriers Association in its petition for exemption has stated, and the NTSB study confirmed, that in many areas, only single-engine aircraft can be operated because of the limitations of the landing strips, which severely restrict the availability of air transport in these areas. The petitioners further stated that under the current rule, unless clear weather is forecast over the entire route from 15 minutes from the departure airport to the destination, passenger-carrying, single-engine commercial operations are not permitted. In many areas, aircraft are the only means of transportation; weather forecasts, when available, rarely predict continuing VFR conditions. Alaska, they stated, was particularly disadvantaged by the current rule.

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situation, the pilot will shed electrical loads to the minimum required for safe operation. Required instruments and equipment could include single navigation and communication equipment, but could also include other equipment necessary for the safe operation of the aircraft in the actual environment, such as pitot heat or instrument lighting. The FAA is therefore deleting both the phrase “minimum” and “to operate navigation and communication equipment” from the regulatory language to clarify that the battery capacity is not limited solely to the capacity needed to operate navigation and communication equipment, but other necessary equipment as well. Thus, should an operator choose not to install two independent electrical power generating sources on the aircraft, this alternate minimum electrical power source will provide the necessary system redundancy for safe emergency operation of the flight.

The FAA further finds that although it did not propose this precise language in the NPRM, it is unnecessary and not in the public interest to delay the entire single-engine IFR rulemaking on this minor technical issue. Nevertheless, the FAA invites comment on the final regulatory language in § 135.163(f)(2).

Redundant Power Source for Gyroscopic Instruments. The FAA specifically sought comments on whether a redundant power source for gyroscopic instruments is needed. One commenter responds that requiring dual engine-driven, pneumatic pumps would go a long way to precluding loss of air-driven gyros. If both pumps were lost because the engine stopped, the battery should last long enough to allow the aircraft to glide to a landing. One commenter states that French IFR rules achieve redundant gyroscopic instruments with one attitude indicator and a second attitude indicator or a turn indicator and a slip indicator powered by a source independent of the first attitude power source. Another commenter states that a third attitude indicator should be installed with at least 3-minute self-contained electrical source independent of the aircraft’s main electrical system. The NTSB recommended a requirement for a redundant source of power for attitude gyroscopic instrumentation. The Board stated that despite requirements for partial panel training, the fatal accident record indicates that many pilots have experienced difficulty maintaining aircraft control during actual partial panel situations. Another commenter, however, states that because there are so few system failures in IFR flight, redundant systems for gyroscopes are unnecessary.

By this amendment, the FAA has adopted the proposed requirement for redundant power sources for gyroscopic instruments to the final rule. Although the NPRM did not contain the regulatory language, the Agency proposed the redundant power source requirement in the preamble. The FAA recognized that the failure of the vacuum/pressure pump of the pneumatic system during IFR in IMC can lead to spatial disorientation of the pilot and loss of aircraft control. The redundancy of the pneumatic system will put single-engine aircraft systems on parity with existing twin-engine aircraft. Because the FAA proposed redundancy for passenger-carrying operations, but not for all-cargo operations, the final rule requirement for redundancy of power source for gyroscopic instruments is limited to passenger-carrying operations.

Autopilot/Co-pilot Requirement. Several commenters state that the proposed rule does not substantiate the need for two pilots or a single pilot with autopilot. There are concerns because the vast majority of single-engine aircraft do not have an autopilot installed that meets the requirements of § 135.105, and retrofitting such aircraft may cost up to \$20,000 and add up to 30 pounds to the empty weight of an aircraft. In addition, according to the commenter, if another crewmember is added to comply with the regulation, one less seat would be available on the small planes, which would be a “severe economic burden.” Another commenter states that the FAA should allow two-axis autopilots; a requirement for a three-axis autopilot would eliminate most single-engine aircraft currently equipped with autopilots.

In response, the FAA disagrees that an autopilot or second pilot is not needed. The complexity and workload in IMC is such that a three-axis autopilot, as opposed to a two-axis autopilot, or second pilot is necessary for safety in air transportation. Section 135.105 currently establishes a standard for an autopilot capable of operating the aircraft controls about three axes.

Concerning the comment on weight penalty and the cost issue, the FAA has determined that these requirements, as well as the other requirements for equipment, training and checking, operations, maintenance, etc., are based on experience and are considered necessary for safety. The FAA has determined that they remain valid for any air carrier involved in commercial passenger-carrying operations. Therefore, the FAA is adopting the autopilot or second pilot as proposed.

Other Equipment. Commenters suggest other equipment that should be required for SEIFR operations. One commenter states that a radar altimeter should be required because it shows actual height above the terrain. Another commenter states that for planes with six or more passengers, the FAA should mandate an emergency cockpit checklist, a cockpit voice recorder, and weather radar. For turbine-powered airplanes, TCAS and GPWS should be required when carrying six or more passengers. Area navigation systems provide an additional margin of safety where radar coverage is minimal. A third commenter

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situation, the pilot will shed electrical loads to the minimum required for safe operation. Required instruments and equipment could include single navigation and communication equipment, but could also include other equipment necessary for the safe operation of the aircraft in the actual environment, such as pitot heat or instrument lighting. The FAA is therefore deleting both the phrase “minimum” and “to operate navigation and communication equipment” from the regulatory language to clarify that the battery capacity is not limited solely to the capacity needed to operate navigation and communication equipment, but other necessary equipment as well. Thus, should an operator choose not to install two independent electrical power generating sources on the aircraft, this alternate minimum electrical power source will provide the necessary system redundancy for safe emergency operation of the flight.

The FAA further finds that although it did not propose this precise language in the NPRM, it is unnecessary and not in the public interest to delay the entire single-engine IFR rulemaking on this minor technical issue. Nevertheless, the FAA invites comment on the final regulatory language in § 135.163(f)(2).

Redundant Power Source for Gyroscopic Instruments. The FAA specifically sought comments on whether a redundant power source for gyroscopic instruments is needed. One commenter responds that requiring dual engine-driven, pneumatic pumps would go a long way to precluding loss of air-driven gyros. If both pumps were lost because the engine stopped, the battery should last long enough to allow the aircraft to glide to a landing. One commenter states that French IFR rules achieve redundant gyroscopic instruments with one attitude indicator and a second attitude indicator or a turn indicator and a slip indicator powered by a source independent of the first attitude power source. Another commenter states that a third attitude indicator should be installed with at least 3-minute self-contained electrical source independent of the aircraft’s main electrical system. The NTSB recommended a requirement for a redundant source of power for attitude gyroscopic instrumentation. The Board stated that despite requirements for partial panel training, the fatal accident record indicates that many pilots have experienced difficulty maintaining aircraft control during actual partial panel situations. Another commenter, however, states that because there are so few system failures in IFR flight, redundant systems for gyroscopes are unnecessary.

By this amendment, the FAA has adopted the proposed requirement for redundant power sources for gyroscopic instruments to the final rule. Although the NPRM did not contain the regulatory language, the Agency proposed the redundant power source requirement in the preamble. The FAA recognized that the failure of the vacuum/pressure pump of the pneumatic system during IFR in IMC can lead to spatial disorientation of the pilot and loss of aircraft control. The redundancy of the pneumatic system will put single-engine aircraft systems on parity with existing twin-engine aircraft. Because the FAA proposed redundancy for passenger-carrying operations, but not for all-cargo operations, the final rule requirement for redundancy of power source for gyroscopic instruments is limited to passenger-carrying operations.

Autopilot/Co-pilot Requirement. Several commenters state that the proposed rule does not substantiate the need for two pilots or a single pilot with autopilot. There are concerns because the vast majority of single-engine aircraft do not have an autopilot installed that meets the requirements of § 135.105, and retrofitting such aircraft may cost up to \$20,000 and add up to 30 pounds to the empty weight of an aircraft. In addition, according to the commenter, if another crewmember is added to comply with the regulation, one less seat would be available on the small planes, which would be a “severe economic burden.” Another commenter states that the FAA should allow two-axis autopilots; a requirement for a three-axis autopilot would eliminate most single-engine aircraft currently equipped with autopilots.

In response, the FAA disagrees that an autopilot or second pilot is not needed. The complexity and workload in IMC is such that a three-axis autopilot, as opposed to a two-axis autopilot, or second pilot is necessary for safety in air transportation. Section 135.105 currently establishes a standard for an autopilot capable of operating the aircraft controls about three axes.

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The FAA recognizes that authorizing an aircraft to operate in IFR conditions neither converts an aircraft to “all-weather,” nor allows it to do anything for which it is not certificated or equipped. Under § 135.227, operators using aircraft not certified for known icing conditions may not operate in those conditions. An aircraft that does not meet the requirements for flying in icing conditions may not be operated in those conditions. Additionally, the FAA notes that part 135 operators can already operate under IFR in U.S. airspace using aircraft that are not certified for known icing as long as the operations anticipated are outside of known icing conditions.

Single-engine aircraft limited by service ceiling or lack of pressurization or oxygen will not be capable of using the IFR system over some mountainous terrain. In addition, the FAA notes that finding a suitable landing place in mountainous terrain, if a forced landing is necessary, may not be very much different from finding a suitable landing place in a wide, densely populated area. Single-engine aircraft are not presently restricted from either area. Thus, single-engine operations addressed in this amendment will not be so restricted either.

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The FAA considered the conditions of weather and terrain in Alaska to be a “worst-case” operating environment. Authorization in the regulations for use of single-engine air transportation under IFR in Alaska would justify single-engine air transportation under IFR in the contiguous U.S. where operating conditions are generally less severe. The FAA’s regulatory evaluation indicates that this rule will create a net safety benefit in the other 49 states as well as Alaska. Exemptions are handled on a case-by-case basis; however, the rationale that the FAA would use to justify an exemption would also apply to all similarly-situated operators.

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Several comments support the ARAC proposals. One commenter states that the FAA received only 12 petitions for exemptions since 1978, which is not a significant number. Finally, one commenter states the proposal would result in slower, single-engine aircraft at metropolitan airports, taxing the ATC system, and in more inexperienced pilots flying in hazardous conditions. To overcome these problems, they suggest that any aircraft that cannot maintain 140 knots on final approach should be excluded from Class B airspace and that pilot qualifications should include 2,000 hours of flight time.

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The FAA estimates that the annualized cost of the final rule is about \$4,708 per aircraft and that the annualized cost savings to the operator is about \$2,142 per aircraft. Therefore, the net annualized cost is about \$2,566 per aircraft.

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The cost for an operator with two aircraft is slightly over the threshold of \$4,960 by approximately three and a half percent. However, in the regulatory evaluation and the above regulatory flexibility analysis, the FAA has made conservative assumptions that could result in costs per aircraft being overestimated. For example, the FAA has assumed that none of the aircraft are in partial compliance with any of the equipment requirements of this regulation. To the extent that some operators have aircraft that are in partial compliance, then costs per aircraft have been overestimated and the FAA believes that compliance costs per aircraft are overestimated by more than five percent. An example of this are the weight penalty costs. The FAA assumed that a battery and related hardware would add 30 pounds to the weight of the aircraft. A Gill 25 amp battery weighing 22 pounds plus hardware would be adequate and weighs about 25 pounds. Therefore, the difference in weight (5 pounds \times 15 gallons/pound \times \$2.32/gallon=\$174) would result in aircraft being under the threshold. Consequently, operators with two or fewer aircraft would not likely to be significantly impacted. The FAA has concluded that this is the case and, therefore, the rule will not affect a substantial number of small entities. In addition, many operators that the FAA considered as being potentially impacted may choose not to carry passengers under IFR. For these reasons, the FAA has determined that a substantial number of operators will not be positively or negatively impacted in a significant way.

International Trade Impact Statement

This final rule is not expected to have any impact on trade opportunities for U.S. firms doing business overseas or foreign firms doing business in the United States. The final rule will primarily affect U.S. operators of aircraft for hire that provide domestic service.

Unfunded Mandates Reform Act Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed “significant intergovernmental mandate.” A “significant intergovernmental mandate” under the Act is any provision in a Federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of \$100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory

This final rule is not expected to have any impact on trade opportunities for U.S. firms doing business overseas or foreign firms doing business in the United States. The final rule will primarily affect U.S. operators of aircraft for hire that provide domestic service.

This final rule does not contain any Federal intergovernmental or private sector mandate. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

Regulatory Flexibility Assessment

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily or disproportionately burdened by Federal Regulations. The RFA requires an analysis if a final rule will have “a significant economic impact on a substantial number of small entities.” The definitions of small entities and guidance material for making determinations required by the RFA are contained in the *Federal Register* (47 FR 32825, July 29, 1982). Federal Aviation Administration (FAA) order 2100.14A outlines the agency’s procedures and criteria for implementing the RFA.

With respect to the final rule, a “small entity” is an operator of aircraft for hire with nine or fewer aircraft. A “significant economic impact on a small entity” is defined as an annualized net compliance cost for operators of aircraft for hire which in 1996 dollars is \$126,100 for scheduled operators whose aircraft have more than 60 seats. It is \$70,490 for scheduled operators whose fleets have aircraft with seating capacities of 60 or fewer seats (other scheduled operators) and \$4,960 for unscheduled operators. A substantial number of small entities is defined as a number that is 11 or more and which is more than one-third of small operators subject to the final rule.

The FAA estimates that the annualized cost of the final rule is about \$4,708 per aircraft and that the annualized cost savings to the operator is about \$2,142 per aircraft. Therefore, the net annualized cost is about \$2,566 per aircraft.

The FAA has initially determined that if every operator were defined as unscheduled, then operators with two aircraft or more will incur a significant impact.

The cost for an operator with two aircraft is slightly over the threshold of \$4,960 by approximately three and a half percent. However, in the regulatory evaluation and the above regulatory flexibility analysis, the FAA has made conservative assumptions that could result in costs per aircraft being overestimated. For example, the FAA has assumed that none of the aircraft are in partial compliance with any of the equipment requirements of this regulation. To the extent that some operators have aircraft that are in partial compliance, then costs per aircraft have been overestimated and the FAA believes that compliance costs per aircraft are overestimated by more than five percent. An example of this are the weight penalty costs. The FAA assumed that a battery and related hardware would add 30 pounds to the weight of the aircraft. A Gill 25 amp battery weighing 22 pounds plus hardware would be adequate and weighs about 25 pounds. Therefore, the difference in weight (5 pounds \times 15 gallons/pound \times \$2.32/gallon=\$174) would result in aircraft being under the threshold. Consequently, operators with two or fewer aircraft would not likely to be significantly impacted. The FAA has concluded that this is the case and, therefore, the rule will not affect a substantial number of small entities. In addition, many operators that the FAA considered as being potentially impacted may choose not to carry passengers under IFR. For these reasons, the FAA has determined that a substantial number of operators will not be positively or negatively impacted in a significant way.

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operated by the certificate holder, the inspector must be given free and uninterrupted access to the pilot compartment of that aircraft. However, this paragraph does not limit the emergency authority of the pilot in command to exclude any person from the pilot compartment in the interest of safety.

(b) A forward observer's seat on the flight deck, or forward passenger seat with headset or speaker must be provided for use by the Administrator while conducting en route inspections. The suitability of the location of the seat and the headset or speaker for use in conducting en route inspections is determined by the Administrator.

§ 135.77 Responsibility for operational control.

Each certificate holder is responsible for operational control and shall list, in the manual required by § 135.21, the name and title of each person authorized by it to exercise operational control.

§ 135.79 Flight locating requirements.

(a) Each certificate holder must have procedures established for locating each flight, for which an FAA flight plan is not filed, that-

(1) Provide the certificate holder with at least the information required to be included in a VFR flight plan;

(2) Provide for timely notification of an FAA facility or search and rescue facility, if an aircraft is overdue or missing; and

(3) Provide the certificate holder with the location, date, and estimated time for reestablishing radio or telephone communications, if the flight will operate in an area where communications cannot be maintained.

(b) Flight locating information shall be retained at the certificate holder's principal place of business, or at other places designated by the certificate holder in the flight locating procedures, until the completion of the flight.

(c) Each certificate holder shall furnish the representative of the Administrator assigned to it with a copy of its flight locating procedures and any changes or additions, unless those procedures are included in a manual required under this part.

§ 135.81 Informing personnel of operational information and appropriate changes.

Each certificate holder shall inform each person in its employment of the operations specifications that apply to that person's duties and responsibilities

and shall make available to each pilot in the certificate holder's employ the following materials in current form:

(a) Airman's Information Manual (Alaska Supplement in Alaska and Pacific Chart Supplement in Pacific-Asia Regions) or a commercial publication that contains the same information.

(b) This part and part 91 of this chapter.

(c) Aircraft Equipment Manuals, and Aircraft Flight Manual or equivalent.

(d) For foreign operations, the International Flight Information Manual or a commercial publication that contains the same information concerning the pertinent operational and entry requirements of the foreign country or countries involved.

§ 135.83 Operating information required.

(a) The operator of an aircraft must provide the following materials, in current and appropriate form, accessible to the pilot at the pilot station, and the pilot shall use them:

(1) A cockpit checklist.

(2) For multiengine aircraft or for aircraft with retractable landing gear, an emergency cockpit checklist containing the procedures required by paragraph (c) of this section, as appropriate.

(3) Pertinent aeronautical charts.

(4) For IFR operations, each pertinent navigational en route, terminal area, and approach and letdown chart.

(5) For multiengine aircraft, one-engine-inoperative climb performance data and if the aircraft is approved for use in IFR or over-the-top operations, that data must be sufficient to enable the pilot to determine compliance with § 135.181(a)(2).

(b) Each cockpit checklist required by paragraph (a)(1) of this section must contain the following procedures:

(1) Before starting engines;

(2) Before takeoff;

(3) Cruise;

(4) Before landing;

(5) After landing;

(6) Stopping engines.

(c) Each emergency cockpit checklist required by paragraph (a)(2) of this section must contain the following procedures as appropriate:

(1) Emergency operation of fuel, hydraulic, electrical, and mechanical systems.

(2) Emergency operation of instruments and controls.

(3) Engine inoperative procedures.

operated by the certificate holder, the inspector must be given free and uninterrupted access to the pilot compartment of that aircraft. However, this paragraph does not limit the emergency authority of the pilot in command to exclude any person from the pilot compartment in the interest of safety.

(b) A forward observer's seat on the flight deck, or forward passenger seat with headset or speaker must be provided for use by the Administrator while conducting en route inspections. The suitability of the location of the seat and the headset or speaker for use in conducting en route inspections is determined by the Administrator.

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(3) Provide the certificate holder with the location, date, and estimated time for reestablishing radio or telephone communications, if the flight will operate in an area where communications cannot be maintained.

(b) Flight locating information shall be retained at the certificate holder's principal place of business, or at other places designated by the certificate holder in the flight locating procedures, until the completion of the flight.

(c) Each certificate holder shall furnish the representative of the Administrator assigned to it with a copy of its flight locating procedures and any changes or additions, unless those procedures are included in a manual required under this part.

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(b) This part and part 91 of this chapter.

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(d) For foreign operations, the International Flight Information Manual or a commercial publication that contains the same information concerning the pertinent operational and entry requirements of the foreign country or countries involved.

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(a) The operator of an aircraft must provide the following materials, in current and appropriate form, accessible to the pilot at the pilot station, and the pilot shall use them:

(1) A cockpit checklist.

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(3) Pertinent aeronautical charts.

(4) For IFR operations, each pertinent navigational en route, terminal area, and approach and letdown chart.

(5) For multiengine aircraft, one-engine-inoperative climb performance data and if the aircraft is approved for use in IFR or over-the-top operations, that data must be sufficient to enable the pilot to determine compliance with § 135.181(a)(2).

(b) Each cockpit checklist required by paragraph (a)(1) of this section must contain the following procedures:

(1) Before starting engines;

(2) Before takeoff;

(3) Cruise;

(4) Before landing;

(5) After landing;

(6) Stopping engines.

(c) Each emergency cockpit checklist required by paragraph (a)(2) of this section must contain the following procedures as appropriate:

(1) Emergency operation of fuel, hydraulic, electrical, and mechanical systems.

(2) Emergency operation of instruments and controls.

(3) Engine inoperative procedures.

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(b) A forward observer's seat on the flight deck, or forward passenger seat with headset or speaker must be provided for use by the Administrator while conducting en route inspections. The suitability of the location of the seat and the headset or speaker for use in conducting en route inspections is determined by the Administrator.

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(c) Aircraft Equipment Manuals, and Aircraft Flight Manual or equivalent.

(d) For foreign operations, the International Flight Information Manual or a commercial publication that contains the same information concerning the pertinent operational and entry requirements of the foreign country or countries involved.

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(1) A cockpit checklist.

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(3) Pertinent aeronautical charts.

(4) For IFR operations, each pertinent navigational en route, terminal area, and approach and letdown chart.

(5) For multiengine aircraft, one-engine-inoperative climb performance data and if the aircraft is approved for use in IFR or over-the-top operations, that data must be sufficient to enable the pilot to determine compliance with § 135.181(a)(2).

(b) Each cockpit checklist required by paragraph (a)(1) of this section must contain the following procedures:

(1) Before starting engines;

(2) Before takeoff;

(3) Cruise;

(4) Before landing;

(5) After landing;

(6) Stopping engines.

(c) Each emergency cockpit checklist required by paragraph (a)(2) of this section must contain the following procedures as appropriate:

(1) Emergency operation of fuel, hydraulic, electrical, and mechanical systems.

(2) Emergency operation of instruments and controls.

(3) Engine inoperative procedures.

(c) For ILS approaches, when reported weather conditions are less than the basic weather conditions in § 9 1.155 of this chapter, no person may use an autopilot with an approach coupler at an altitude above the terrain that is less than 50 feet above the terrain, or the maximum altitude loss specified in the approved Airplane Flight Manual or equivalent for the malfunction of the autopilot with approach coupler, whichever is higher.

(d) Without regard to paragraph (a), (b), or (c) of this section, the Administrator may issue operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, if-

(1) The system does not contain any altitude loss (above zero) specified in the approved Aircraft Flight Manual or equivalent for malfunction of the autopilot with approach coupler; and

(2) The Administrator finds that the use of the system to touchdown will not otherwise adversely affect the safety standards of this section.

[(e) Notwithstanding paragraph (a) of this section, the Administrator issues operations specifications to allow the use of an approved autopilot system with automatic capability during the takeoff and initial climb phase of flight provided:

[(1) The Airplane Flight Manual specifies a minimum altitude engagement certification restriction,

[(2) The system is not engaged prior to the minimum engagement certification restriction specified in the Airplane Flight Manual, or an altitude specified by the Administrator, whichever is higher, and

[(3) The Administrator finds that the use of the system will not otherwise affect the safety standards required by this section.]

[(f)] This section does not apply to the operations conducted in rotorcraft.

(Amdt. 135-32, Eff. 8/18/90); [(Amdt. 135-68, Eff. 6/20/97)]

§ 135.95 Airmen: Limitations on use of services.

No certificate holder may use the services of any person as a airman unless the person performing those services-

(a) Holds an appropriate and current airman certificate; and

(b) Is qualified, under this chapter, for the operation for which the person is to be used.

§ 135.97 Aircraft and facilities for recent flight experience.

Each certificate holder shall provide aircraft and facilities to enable each of its pilots to maintain and demonstrate the pilot's ability to conduct all operations for which the pilot is authorized.

§ 135.99 Composition of flight crew.

(a) No certificate holder may operate an aircraft with less than the minimum flight crew specified in the aircraft operating limitations or the Aircraft Flight Manual for that aircraft and required by this part for the kind of operation being conducted.

(b) No certificate holder may operate an aircraft without a second in command if that aircraft has a passenger seating configuration, excluding any pilot seat, of ten seats or more.

§ 135.100 Flight crewmember duties.

(a) No certificate holder shall require, nor may any flight crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft. Duties such as company required calls made for such nonsafety related purposes as ordering galley supplies and confirming passenger connections, announcements made to passengers promoting the air carrier or pointing out sights of interest, and filling out company payroll and related records are not required for the safe operation of the aircraft.

(b) No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties. Activities such as eating meals, engaging in nonessential conversations within the cockpit and nonessential communications between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight are not required for the safe operation of the aircraft.

(c) For the purposes of this section, critical phases of flight includes all ground operations involving taxi, takeoff and landing, and all other flight operations conducted below 10,000 feet, except cruise flight.

NOTE: Taxi is defined as "movement of an airplane under its own power on the surface of an airport."

(Amdt. 135-11, Eff. 5/18/81); (Amdt. 135-14, Eff. 6/18/81); (Amdt. 135-15, Eff. 6/11/81)

(c) For ILS approaches, when reported weather conditions are less than the basic weather conditions in § 9 1.155 of this chapter, no person may use an autopilot with an approach coupler at an altitude above the terrain that is less than 50 feet above the terrain, or the maximum altitude loss specified in the approved Airplane Flight Manual or equivalent for the malfunction of the autopilot with approach coupler, whichever is higher.

(d) Without regard to paragraph (a), (b), or (c) of this section, the Administrator may issue operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, if-

(1) The system does not contain any altitude loss (above zero) specified in the approved Aircraft Flight Manual or equivalent for malfunction of the autopilot with approach coupler; and

(2) The Administrator finds that the use of the system to touchdown will not otherwise adversely affect the safety standards of this section.

[(e) Notwithstanding paragraph (a) of this section, the Administrator issues operations specifications to allow the use of an approved autopilot system with automatic capability during the takeoff and initial climb phase of flight provided:

[(1) The Airplane Flight Manual specifies a minimum altitude engagement certification restriction,

[(2) The system is not engaged prior to the minimum engagement certification restriction specified in the Airplane Flight Manual, or an altitude specified by the Administrator, whichever is higher, and

[(3) The Administrator finds that the use of the system will not otherwise affect the safety standards required by this section.]

[(f)] This section does not apply to the operations conducted in rotorcraft.

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(b) Is qualified, under this chapter, for the operation for which the person is to be used.

§ 135.97 Aircraft and facilities for recent flight experience.

Each certificate holder shall provide aircraft and facilities to enable each of its pilots to maintain and demonstrate the pilot's ability to conduct all operations for which the pilot is authorized.

§ 135.99 Composition of flight crew.

(a) No certificate holder may operate an aircraft with less than the minimum flight crew specified in the aircraft operating limitations or the Aircraft Flight Manual for that aircraft and required by this part for the kind of operation being conducted.

(b) No certificate holder may operate an aircraft without a second in command if that aircraft has a passenger seating configuration, excluding any pilot seat, of ten seats or more.

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(a) No certificate holder shall require, nor may any flight crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft. Duties such as company required calls made for such nonsafety related purposes as ordering galley supplies and confirming passenger connections, announcements made to passengers promoting the air carrier or pointing out sights of interest, and filling out company payroll and related records are not required for the safe operation of the aircraft.

(b) No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties. Activities such as eating meals, engaging in nonessential conversations within the cockpit and nonessential communications between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight are not required for the safe operation of the aircraft.

(c) For the purposes of this section, critical phases of flight includes all ground operations involving taxi, takeoff and landing, and all other flight operations conducted below 10,000 feet, except cruise flight.

NOTE: Taxi is defined as "movement of an airplane under its own power on the surface of an airport."

(Amdt. 135-11, Eff. 5/18/81); (Amdt. 135-14, Eff. 6/18/81); (Amdt. 135-15, Eff. 6/11/81)

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(d) Without regard to paragraph (a), (b), or (c) of this section, the Administrator may issue operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, if-

(1) The system does not contain any altitude loss (above zero) specified in the approved Aircraft Flight Manual or equivalent for malfunction of the autopilot with approach coupler; and

(2) The Administrator finds that the use of the system to touchdown will not otherwise adversely affect the safety standards of this section.

[(e) Notwithstanding paragraph (a) of this section, the Administrator issues operations specifications to allow the use of an approved autopilot system with automatic capability during the takeoff and initial climb phase of flight provided:

[(1) The Airplane Flight Manual specifies a minimum altitude engagement certification restriction,

[(2) The system is not engaged prior to the minimum engagement certification restriction specified in the Airplane Flight Manual, or an altitude specified by the Administrator, whichever is higher, and

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(a) Holds an appropriate and current airman certificate; and

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§ 135.99 Composition of flight crew.

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(b) No certificate holder may operate an aircraft without a second in command if that aircraft has a passenger seating configuration, excluding any pilot seat, of ten seats or more.

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(d) Without regard to paragraph (a), (b), or (c) of this section, the Administrator may issue operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, if-

(1) The system does not contain any altitude loss (above zero) specified in the approved Aircraft Flight Manual or equivalent for malfunction of the autopilot with approach coupler; and

(2) The Administrator finds that the use of the system to touchdown will not otherwise adversely affect the safety standards of this section.

[(e) Notwithstanding paragraph (a) of this section, the Administrator issues operations specifications to allow the use of an approved autopilot system with automatic capability during the takeoff and initial climb phase of flight provided:

[(1) The Airplane Flight Manual specifies a minimum altitude engagement certification restriction,

[(2) The system is not engaged prior to the minimum engagement certification restriction specified in the Airplane Flight Manual, or an altitude specified by the Administrator, whichever is higher, and

[(3) The Administrator finds that the use of the system will not otherwise affect the safety standards required by this section.]

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(a) No certificate holder shall require, nor may any flight crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft. Duties such as company required calls made for such nonsafety related purposes as ordering galley supplies and confirming passenger connections, announcements made to passengers promoting the air carrier or pointing out sights of interest, and filling out company payroll and related records are not required for the safe operation of the aircraft.

(b) No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties. Activities such as eating meals, engaging in nonessential conversations within the cockpit and nonessential communications between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight are not required for the safe operation of the aircraft.

(c) For the purposes of this section, critical phases of flight includes all ground operations involving taxi, takeoff and landing, and all other flight operations conducted below 10,000 feet, except cruise flight.

NOTE: Taxi is defined as "movement of an airplane under its own power on the surface of an airport."

(Amdt. 135-11, Eff. 5/18/81); (Amdt. 135-14, Eff. 6/18/81); (Amdt. 135-15, Eff. 6/11/81)

(c) For ILS approaches, when reported weather conditions are less than the basic weather conditions in § 9 1.155 of this chapter, no person may use an autopilot with an approach coupler at an altitude above the terrain that is less than 50 feet above the terrain, or the maximum altitude loss specified in the approved Airplane Flight Manual or equivalent for the malfunction of the autopilot with approach coupler, whichever is higher.

(d) Without regard to paragraph (a), (b), or (c) of this section, the Administrator may issue operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, if-

(1) The system does not contain any altitude loss (above zero) specified in the approved Aircraft Flight Manual or equivalent for malfunction of the autopilot with approach coupler; and

(2) The Administrator finds that the use of the system to touchdown will not otherwise adversely affect the safety standards of this section.

[(e) Notwithstanding paragraph (a) of this section, the Administrator issues operations specifications to allow the use of an approved autopilot system with automatic capability during the takeoff and initial climb phase of flight provided:

[(1) The Airplane Flight Manual specifies a minimum altitude engagement certification restriction,

[(2) The system is not engaged prior to the minimum engagement certification restriction specified in the Airplane Flight Manual, or an altitude specified by the Administrator, whichever is higher, and

[(3) The Administrator finds that the use of the system will not otherwise affect the safety standards required by this section.]

[(f)] This section does not apply to the operations conducted in rotorcraft.

(Amdt. 135-32, Eff. 8/18/90); [(Amdt. 135-68, Eff. 6/20/97)]

§ 135.95 Airmen: Limitations on use of services.

No certificate holder may use the services of any person as a airman unless the person performing those services-

(a) Holds an appropriate and current airman certificate; and

(b) Is qualified, under this chapter, for the operation for which the person is to be used.

§ 135.97 Aircraft and facilities for recent flight experience.

Each certificate holder shall provide aircraft and facilities to enable each of its pilots to maintain and demonstrate the pilot's ability to conduct all operations for which the pilot is authorized.

§ 135.99 Composition of flight crew.

(a) No certificate holder may operate an aircraft with less than the minimum flight crew specified in the aircraft operating limitations or the Aircraft Flight Manual for that aircraft and required by this part for the kind of operation being conducted.

(b) No certificate holder may operate an aircraft without a second in command if that aircraft has a passenger seating configuration, excluding any pilot seat, of ten seats or more.

§ 135.100 Flight crewmember duties.

(a) No certificate holder shall require, nor may any flight crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft. Duties such as company required calls made for such nonsafety related purposes as ordering galley supplies and confirming passenger connections, announcements made to passengers promoting the air carrier or pointing out sights of interest, and filling out company payroll and related records are not required for the safe operation of the aircraft.

(b) No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties. Activities such as eating meals, engaging in nonessential conversations within the cockpit and nonessential communications between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight are not required for the safe operation of the aircraft.

(c) For the purposes of this section, critical phases of flight includes all ground operations involving taxi, takeoff and landing, and all other flight operations conducted below 10,000 feet, except cruise flight.

NOTE: Taxi is defined as "movement of an airplane under its own power on the surface of an airport."

(Amdt. 135-11, Eff. 5/18/81); (Amdt. 135-14, Eff. 6/18/81); (Amdt. 135-15, Eff. 6/11/81)

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

(B) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

(C) The restraint system must bear the appropriate label(s).

(b) [Except as provided in paragraph (b)(3), the following prohibitions apply to certificate holders:

[(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, or movement on the surface.

[(2) Except as required in paragraph (b)(1) of this section, no certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant provided:

[(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child's use;

[(ii) The requirements of paragraph (a)(2)(i) are met;

[(iii) The requirements of (a)(2)(iii) are met; and

[(iv) The child restraint system has one or more of the labels described in paragraph (a)(2)(ii)(A) through paragraph (a)(2)(ii)(C).

[(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.]

(Amdt. 135-44, Eff. 10/15/92); [(Amdt. 135-62, Eff. 9/3/96)]

§ 135.129 Exit seating.

(a)(1) *Applicability.* This section applies to all certificate holders operating under this part, except for on-demand operations with aircraft having 19 or fewer passenger seats and commuter operations with aircraft having 9 or fewer passenger seats.

(2) *Duty to make determination of suitability.*

Each certificate holder shall determine, to the extent necessary to perform the applicable functions of paragraph (d) of this section, the suitability of each person it permits to occupy an exit seat. For the purpose of this section-

(i) *Exit seat means-*

(A) Each seat having direct access to an exit; and

(B) Each seat in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit.

(ii) A passenger seat having *direct access* means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.

(3) *Persons designated to make determination.*

Each certificate holder shall make the passenger exit seating determinations required by this paragraph in a non-discriminatory manner consistent with the requirements of this section, by persons designated in the certificate holder's required operations manual.

(4) *Submission of designation for approval.*

Each certificate holder shall designate the exit seats for each passenger seating configuration in its fleet in accordance with the definitions in this paragraph and submit those designations for approval as part of the procedures required to be submitted for approval under paragraphs (n) and (p) of this section.

(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because-

(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:

(i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;

(ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;

(iii) To push, shove, pull, or otherwise open emergency exits;

(iv) To lift out, hold, deposit on nearby seats, or maneuver over the seatbacks to the next row objects the size and weight of overwing window exit doors;

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

(B) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

(C) The restraint system must bear the appropriate label(s).

(b) [Except as provided in paragraph (b)(3), the following prohibitions apply to certificate holders:

[(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, or movement on the surface.

[(2) Except as required in paragraph (b)(1) of this section, no certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant provided:

[(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child's use;

[(ii) The requirements of paragraph (a)(2)(i) are met;

[(iii) The requirements of (a)(2)(iii) are met; and

[(iv) The child restraint system has one or more of the labels described in paragraph (a)(2)(ii)(A) through paragraph (a)(2)(ii)(C).

[(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.]

(Amdt. 135-44, Eff. 10/15/92); [(Amdt. 135-62, Eff. 9/3/96)]

§ 135.129 Exit seating.

(a)(1) *Applicability.* This section applies to all certificate holders operating under this part, except for on-demand operations with aircraft having 19 or fewer passenger seats and commuter operations with aircraft having 9 or fewer passenger seats.

(2) *Duty to make determination of suitability.*

Each certificate holder shall determine, to the extent necessary to perform the applicable functions of paragraph (d) of this section, the suitability of each person it permits to occupy an exit seat. For the purpose of this section-

(i) *Exit seat means-*

(A) Each seat having direct access to an exit; and

(B) Each seat in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit.

(ii) A passenger seat having *direct access* means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.

(3) *Persons designated to make determination.*

Each certificate holder shall make the passenger exit seating determinations required by this paragraph in a non-discriminatory manner consistent with the requirements of this section, by persons designated in the certificate holder's required operations manual.

(4) *Submission of designation for approval.*

Each certificate holder shall designate the exit seats for each passenger seating configuration in its fleet in accordance with the definitions in this paragraph and submit those designations for approval as part of the procedures required to be submitted for approval under paragraphs (n) and (p) of this section.

(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because-

(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:

(i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;

(ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;

(iii) To push, shove, pull, or otherwise open emergency exits;

(iv) To lift out, hold, deposit on nearby seats, or maneuver over the seatbacks to the next row objects the size and weight of overwing window exit doors;

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

(B) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

(C) The restraint system must bear the appropriate label(s).

(b) [Except as provided in paragraph (b)(3), the following prohibitions apply to certificate holders:

[(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, or movement on the surface.

[(2) Except as required in paragraph (b)(1) of this section, no certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant provided:

[(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child's use;

[(ii) The requirements of paragraph (a)(2)(i) are met;

[(iii) The requirements of (a)(2)(iii) are met; and

[(iv) The child restraint system has one or more of the labels described in paragraph (a)(2)(ii)(A) through paragraph (a)(2)(ii)(C).

[(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.]

(Amdt. 135-44, Eff. 10/15/92); [(Amdt. 135-62, Eff. 9/3/96)]

§ 135.129 Exit seating.

(a)(1) *Applicability.* This section applies to all certificate holders operating under this part, except for on-demand operations with aircraft having 19 or fewer passenger seats and commuter operations with aircraft having 9 or fewer passenger seats.

(2) *Duty to make determination of suitability.*

Each certificate holder shall determine, to the extent necessary to perform the applicable functions of paragraph (d) of this section, the suitability of each person it permits to occupy an exit seat. For the purpose of this section-

(i) *Exit seat means-*

(A) Each seat having direct access to an exit; and

(B) Each seat in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit.

(ii) A passenger seat having *direct access* means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.

(3) *Persons designated to make determination.*

Each certificate holder shall make the passenger exit seating determinations required by this paragraph in a non-discriminatory manner consistent with the requirements of this section, by persons designated in the certificate holder's required operations manual.

(4) *Submission of designation for approval.*

Each certificate holder shall designate the exit seats for each passenger seating configuration in its fleet in accordance with the definitions in this paragraph and submit those designations for approval as part of the procedures required to be submitted for approval under paragraphs (n) and (p) of this section.

(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because-

(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:

(i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;

(ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;

(iii) To push, shove, pull, or otherwise open emergency exits;

(iv) To lift out, hold, deposit on nearby seats, or maneuver over the seatbacks to the next row objects the size and weight of overwing window exit doors;

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

(B) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

(C) The restraint system must bear the appropriate label(s).

(b) [Except as provided in paragraph (b)(3), the following prohibitions apply to certificate holders:

[(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, or movement on the surface.

[(2) Except as required in paragraph (b)(1) of this section, no certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant provided:

[(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child's use;

[(ii) The requirements of paragraph (a)(2)(i) are met;

[(iii) The requirements of (a)(2)(iii) are met; and

[(iv) The child restraint system has one or more of the labels described in paragraph (a)(2)(ii)(A) through paragraph (a)(2)(ii)(C).

[(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.]

(Amdt. 135-44, Eff. 10/15/92); [(Amdt. 135-62, Eff. 9/3/96)]

§ 135.129 Exit seating.

(a)(1) *Applicability.* This section applies to all certificate holders operating under this part, except for on-demand operations with aircraft having 19 or fewer passenger seats and commuter operations with aircraft having 9 or fewer passenger seats.

(2) *Duty to make determination of suitability.*

Each certificate holder shall determine, to the extent necessary to perform the applicable functions of paragraph (d) of this section, the suitability of each person it permits to occupy an exit seat. For the purpose of this section-

(i) *Exit seat means-*

(A) Each seat having direct access to an exit; and

(B) Each seat in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit.

(ii) A passenger seat having *direct access* means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.

(3) *Persons designated to make determination.*

Each certificate holder shall make the passenger exit seating determinations required by this paragraph in a non-discriminatory manner consistent with the requirements of this section, by persons designated in the certificate holder's required operations manual.

(4) *Submission of designation for approval.*

Each certificate holder shall designate the exit seats for each passenger seating configuration in its fleet in accordance with the definitions in this paragraph and submit those designations for approval as part of the procedures required to be submitted for approval under paragraphs (n) and (p) of this section.

(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because-

(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:

(i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;

(ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;

(iii) To push, shove, pull, or otherwise open emergency exits;

(iv) To lift out, hold, deposit on nearby seats, or maneuver over the seatbacks to the next row objects the size and weight of overwing window exit doors;

(iii) The certificate holder complies with the following requirements:

(A) The restraint system must be properly secured to an approved forward-facing seat or berth;

(B) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system; and

(C) The restraint system must bear the appropriate label(s).

(b) [Except as provided in paragraph (b)(3), the following prohibitions apply to certificate holders:

[(1) No certificate holder may permit a child, in an aircraft, to occupy a booster-type child restraint system, a vest-type child restraint system, a harness-type child restraint system, or a lap held child restraint system during take off, landing, or movement on the surface.

[(2) Except as required in paragraph (b)(1) of this section, no certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant, from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant provided:

[(i) The child holds a ticket for an approved seat or berth or such seat or berth is otherwise made available by the certificate holder for the child's use;

[(ii) The requirements of paragraph (a)(2)(i) are met;

[(iii) The requirements of (a)(2)(iii) are met; and

[(iv) The child restraint system has one or more of the labels described in paragraph (a)(2)(ii)(A) through paragraph (a)(2)(ii)(C).

[(3) This section does not prohibit the certificate holder from providing child restraint systems authorized by this or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.]

(Amdt. 135-44, Eff. 10/15/92); [(Amdt. 135-62, Eff. 9/3/96)]

§ 135.129 Exit seating.

(a)(1) *Applicability.* This section applies to all certificate holders operating under this part, except for on-demand operations with aircraft having 19 or fewer passenger seats and commuter operations with aircraft having 9 or fewer passenger seats.

(2) *Duty to make determination of suitability.*

Each certificate holder shall determine, to the extent necessary to perform the applicable functions of paragraph (d) of this section, the suitability of each person it permits to occupy an exit seat. For the purpose of this section-

(i) *Exit seat means-*

(A) Each seat having direct access to an exit; and

(B) Each seat in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit.

(ii) A passenger seat having *direct access* means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.

(3) *Persons designated to make determination.*

Each certificate holder shall make the passenger exit seating determinations required by this paragraph in a non-discriminatory manner consistent with the requirements of this section, by persons designated in the certificate holder's required operations manual.

(4) *Submission of designation for approval.*

Each certificate holder shall designate the exit seats for each passenger seating configuration in its fleet in accordance with the definitions in this paragraph and submit those designations for approval as part of the procedures required to be submitted for approval under paragraphs (n) and (p) of this section.

(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because-

(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:

(i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;

(ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;

(iii) To push, shove, pull, or otherwise open emergency exits;

(iv) To lift out, hold, deposit on nearby seats, or maneuver over the seatbacks to the next row objects the size and weight of overwing window exit doors;

§ 135.149 Equipment requirements:
General.

No person may operate an aircraft unless it is equipped with-

(a) A sensitive altimeter that is adjustable for barometric pressure;

(b) Heating or deicing equipment for each carburetor or, for a pressure carburetor, an alternate air source;

(c) For turbojet airplanes, in addition to two gyroscopic bank-and-pitch indicators (artificial horizons) for use at the pilot stations, a third indicator that is installed in accordance with the instrument requirements prescribed in § 121.305(j) of this chapter.

(d) [Reserved]

(e) For turbine-powered aircraft, any other equipment as the Administrator may require.

(Amdt. 135-1, Eff. 5/7/79); (Amdt. 135-34, Eff. 11/27/89); (Amdt. 135-38, Eff. 11/26/90)

§ 135.150 Public address and crewmember interphone systems.

No person may operate an aircraft having a passenger seating configuration, excluding any pilot seat, of more than 19 unless it is equipped with-

(a) A public address system which-

(1) Is capable of operation independent of the crewmember interphone system required by paragraph (b) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(4) For each required floor-level 'passenger emergency exit which has an adjacent flight attendant seat, has a microphone which is readily accessible to the seated flight attendant, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants;

(5) Is capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible;

(6) Is audible at all passenger seats, lavatories, and flight attendant seats and work stations; and

(7) For transport category airplanes manufactured on or after November 27, 1990, meets the requirements of § 25.1423 of this chapter.

(b) A crewmember interphone system which-

(1) Is capable of operation independent of the public address system required by paragraph (a) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Provides a means of two-way communication between the pilot compartment and-

(i) Each passenger compartment; and

(ii) Each galley located on other than the main passenger deck level;

(4) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(5) Is accessible for use from at least one normal flight attendant station in each passenger compartment;

(6) Is capable of operation within 10 seconds by a flight attendant at each of those stations in each passenger compartment from which its use is accessible; and

(7) For large turbojet-powered airplanes-

(i) Is accessible for use at enough flight attendant stations so that all floor-level emergency exits (or entryways to those exits in the case of exits located within galleys) in each passenger compartment are observable from one or more of those stations so equipped;

(ii) Has an alerting system incorporating aural or visual signals for use by flight crewmembers to alert flight attendants and for use by flight attendants to alert flight crewmembers;

(iii) For the alerting system required by paragraph (b)(7)(ii) of this section, has a means for the recipient of a call to determine whether it is a normal call or an emergency call; and

(iv) When the airplane is on the ground, provides a means of two-way communication between ground personnel and either of at least two flight crewmembers in the pilot compartment. The inter-phone system station for use by ground personnel must be so located that personnel using the system may avoid visible detection from within the airplane.

Docket No. 24995 (54 FR 43926) Eff. 10/27/89
 (Amdt. 135-34, Eff. 11/27/89)

§ 135.149 Equipment requirements:
General.

No person may operate an aircraft unless it is equipped with-

(a) A sensitive altimeter that is adjustable for barometric pressure;

(b) Heating or deicing equipment for each carburetor or, for a pressure carburetor, an alternate air source;

(c) For turbojet airplanes, in addition to two gyroscopic bank-and-pitch indicators (artificial horizons) for use at the pilot stations, a third indicator that is installed in accordance with the instrument requirements prescribed in § 121.305(j) of this chapter.

(d) [Reserved]

(e) For turbine-powered aircraft, any other equipment as the Administrator may require.

(Amdt. 135-1, Eff. 5/7/79); (Amdt. 135-34, Eff. 11/27/89); (Amdt. 135-38, Eff. 11/26/90)

§ 135.150 Public address and crewmember interphone systems.

No person may operate an aircraft having a passenger seating configuration, excluding any pilot seat, of more than 19 unless it is equipped with-

(a) A public address system which-

(1) Is capable of operation independent of the crewmember interphone system required by paragraph (b) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(4) For each required floor-level 'passenger emergency exit which has an adjacent flight attendant seat, has a microphone which is readily accessible to the seated flight attendant, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants;

(5) Is capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible;

(6) Is audible at all passenger seats, lavatories, and flight attendant seats and work stations; and

(7) For transport category airplanes manufactured on or after November 27, 1990, meets the requirements of § 25.1423 of this chapter.

(b) A crewmember interphone system which-

(1) Is capable of operation independent of the public address system required by paragraph (a) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Provides a means of two-way communication between the pilot compartment and-

(i) Each passenger compartment; and

(ii) Each galley located on other than the main passenger deck level;

(4) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(5) Is accessible for use from at least one normal flight attendant station in each passenger compartment;

(6) Is capable of operation within 10 seconds by a flight attendant at each of those stations in each passenger compartment from which its use is accessible; and

(7) For large turbojet-powered airplanes-

(i) Is accessible for use at enough flight attendant stations so that all floor-level emergency exits (or entryways to those exits in the case of exits located within galleys) in each passenger compartment are observable from one or more of those stations so equipped;

(ii) Has an alerting system incorporating aural or visual signals for use by flight crewmembers to alert flight attendants and for use by flight attendants to alert flight crewmembers;

(iii) For the alerting system required by paragraph (b)(7)(ii) of this section, has a means for the recipient of a call to determine whether it is a normal call or an emergency call; and

(iv) When the airplane is on the ground, provides a means of two-way communication between ground personnel and either of at least two flight crewmembers in the pilot compartment. The inter-phone system station for use by ground personnel must be so located that personnel using the system may avoid visible detection from within the airplane.

Docket No. 24995 (54 FR 43926) Eff. 10/27/89
 (Amdt. 135-34, Eff. 11/27/89)

§ 135.149 Equipment requirements:
General.

No person may operate an aircraft unless it is equipped with-

(a) A sensitive altimeter that is adjustable for barometric pressure;

(b) Heating or deicing equipment for each carburetor or, for a pressure carburetor, an alternate air source;

(c) For turbojet airplanes, in addition to two gyroscopic bank-and-pitch indicators (artificial horizons) for use at the pilot stations, a third indicator that is installed in accordance with the instrument requirements prescribed in § 121.305(j) of this chapter.

(d) [Reserved]

(e) For turbine-powered aircraft, any other equipment as the Administrator may require.

(Amdt. 135-1, Eff. 5/7/79); (Amdt. 135-34, Eff. 11/27/89); (Amdt. 135-38, Eff. 11/26/90)

§ 135.150 Public address and crewmember interphone systems.

No person may operate an aircraft having a passenger seating configuration, excluding any pilot seat, of more than 19 unless it is equipped with-

(a) A public address system which-

(1) Is capable of operation independent of the crewmember interphone system required by paragraph (b) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(4) For each required floor-level 'passenger emergency exit which has an adjacent flight attendant seat, has a microphone which is readily accessible to the seated flight attendant, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants;

(5) Is capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible;

(6) Is audible at all passenger seats, lavatories, and flight attendant seats and work stations; and

(7) For transport category airplanes manufactured on or after November 27, 1990, meets the requirements of § 25.1423 of this chapter.

(b) A crewmember interphone system which-

(1) Is capable of operation independent of the public address system required by paragraph (a) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Provides a means of two-way communication between the pilot compartment and-

(i) Each passenger compartment; and

(ii) Each galley located on other than the main passenger deck level;

(4) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(5) Is accessible for use from at least one normal flight attendant station in each passenger compartment;

(6) Is capable of operation within 10 seconds by a flight attendant at each of those stations in each passenger compartment from which its use is accessible; and

(7) For large turbojet-powered airplanes-

(i) Is accessible for use at enough flight attendant stations so that all floor-level emergency exits (or entryways to those exits in the case of exits located within galleys) in each passenger compartment are observable from one or more of those stations so equipped;

(ii) Has an alerting system incorporating aural or visual signals for use by flight crewmembers to alert flight attendants and for use by flight attendants to alert flight crewmembers;

(iii) For the alerting system required by paragraph (b)(7)(ii) of this section, has a means for the recipient of a call to determine whether it is a normal call or an emergency call; and

(iv) When the airplane is on the ground, provides a means of two-way communication between ground personnel and either of at least two flight crewmembers in the pilot compartment. The inter-phone system station for use by ground personnel must be so located that personnel using the system may avoid visible detection from within the airplane.

Docket No. 24995 (54 FR 43926) Eff. 10/27/89
 (Amdt. 135-34, Eff. 11/27/89)

§ 135.149 Equipment requirements:
General.

No person may operate an aircraft unless it is equipped with-

(a) A sensitive altimeter that is adjustable for barometric pressure;

(b) Heating or deicing equipment for each carburetor or, for a pressure carburetor, an alternate air source;

(c) For turbojet airplanes, in addition to two gyroscopic bank-and-pitch indicators (artificial horizons) for use at the pilot stations, a third indicator that is installed in accordance with the instrument requirements prescribed in § 121.305(j) of this chapter.

(d) [Reserved]

(e) For turbine-powered aircraft, any other equipment as the Administrator may require.

(Amdt. 135-1, Eff. 5/7/79); (Amdt. 135-34, Eff. 11/27/89); (Amdt. 135-38, Eff. 11/26/90)

§ 135.150 Public address and crewmember interphone systems.

No person may operate an aircraft having a passenger seating configuration, excluding any pilot seat, of more than 19 unless it is equipped with-

(a) A public address system which-

(1) Is capable of operation independent of the crewmember interphone system required by paragraph (b) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(4) For each required floor-level 'passenger emergency exit which has an adjacent flight attendant seat, has a microphone which is readily accessible to the seated flight attendant, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants;

(5) Is capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible;

(6) Is audible at all passenger seats, lavatories, and flight attendant seats and work stations; and

(7) For transport category airplanes manufactured on or after November 27, 1990, meets the requirements of § 25.1423 of this chapter.

(b) A crewmember interphone system which-

(1) Is capable of operation independent of the public address system required by paragraph (a) of this section, except for handsets, headsets, microphones, selector switches, and signaling devices;

(2) Is approved in accordance with § 21.305 of this chapter;

(3) Provides a means of two-way communication between the pilot compartment and-

(i) Each passenger compartment; and

(ii) Each galley located on other than the main passenger deck level;

(4) Is accessible for immediate use from each of two flight crewmember stations in the pilot compartment;

(5) Is accessible for use from at least one normal flight attendant station in each passenger compartment;

(6) Is capable of operation within 10 seconds by a flight attendant at each of those stations in each passenger compartment from which its use is accessible; and

(7) For large turbojet-powered airplanes-

(i) Is accessible for use at enough flight attendant stations so that all floor-level emergency exits (or entryways to those exits in the case of exits located within galleys) in each passenger compartment are observable from one or more of those stations so equipped;

(ii) Has an alerting system incorporating aural or visual signals for use by flight crewmembers to alert flight attendants and for use by flight attendants to alert flight crewmembers;

(iii) For the alerting system required by paragraph (b)(7)(ii) of this section, has a means for the recipient of a call to determine whether it is a normal call or an emergency call; and

(iv) When the airplane is on the ground, provides a means of two-way communication between ground personnel and either of at least two flight crewmembers in the pilot compartment. The inter-phone system station for use by ground personnel must be so located that personnel using the system may avoid visible detection from within the airplane.

Docket No. 24995 (54 FR 43926) Eff. 10/27/89
 (Amdt. 135-34, Eff. 11/27/89)

- (49) Selected speed (when an information source is installed);
- (50) Selected mach (when an information source is installed);
- (51) Selected vertical speed (when an information source is installed);
- (52) Selected heading (when an information source is installed);
- (53) Selected flight path (when an information source is installed);
- (54) Selected decision height (when an information source is installed);
- (55) EFIS display format;
- (56) Multi-function/engine/alerts display format;
- (57) Thrust command (when an information source is installed);
- (58) Thrust target (when an information source is installed);
- (59) Fuel quantity in CG trim tank (when an information source is installed);
- (60) Primary Navigation System Reference;
- (61) Icing (when an information source is installed);
- (62) Engine warning each engine vibration (when an information source is installed);
- (63) Engine warning each engine over temp. (when an information source is installed);
- (64) Engine warning each engine oil pressure low (when an information source is installed);
- (65) Engine warning each engine over speed (when an information source is installed);
- (66) Yaw trim surface position;
- (67) Roll trim surface position;
- (68) Brake pressure (selected system);
- (69) Brake pedal application (left and right);
- (70) Yaw or sideslip angle (when an information source is installed);
- (71) Engine bleed valve position (when an information source is installed);
- (72) De-icing or anti-icing system selection (when an information source is installed);
- (73) Computed center of gravity (when an information source is installed);
- (74) AC electrical bus status;
- (75) DC electrical bus status;
- (76) APU bleed valve position (when an information source is installed);
- (77) Hydraulic pressure (each system);
- (78) Loss of cabin pressure;
- (79) Computer failure;
- (80) Heads-up display (when an information source is installed);

- (81) Par-a-visual display (when an information source is installed);
- (82) Cockpit trim control input position-pitch;
- (83) Cockpit trim control input position-roll;
- (84) Cockpit trim control input position-yaw;
- (85) Trailing edge flap and cockpit flap control position;
- (86) Leading edge flap and cockpit flap control position;
- (87) Ground spoiler position and speed brake selection; and
- (88) All cockpit flight control input forces (control wheel, control column, rudder pedal).

[(i) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, manufactured after August 18, 2000—

[(1) The parameters listed in paragraphs (h)(1) through (h)(57) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix F of this part.

[(j) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, that are manufactured after August 19, 2002, the parameters listed in paragraphs (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(k) For airplanes manufactured before August 18, 1997, the following airplane type need not comply with this section: deHavilland DHC-6.]
Docket No. 25530 (53 FR 26151) Eff. 7/1 1/88; (Amdt. 135-26, Eff. 10/1 1/88); [(Amdt. 135-69, Eff. 8/18/97)]

§ 135.153 Ground proximity warning system.

(a) [No person may operate a turbine-powered airplane having a passenger seat configuration of 10 seats or more, excluding any pilot seat, unless it is equipped with an approved ground proximity warning system.]

(b) [Reserved]

- (49) Selected speed (when an information source is installed);
- (50) Selected mach (when an information source is installed);
- (51) Selected vertical speed (when an information source is installed);
- (52) Selected heading (when an information source is installed);
- (53) Selected flight path (when an information source is installed);
- (54) Selected decision height (when an information source is installed);
- (55) EFIS display format;
- (56) Multi-function/engine/alerts display format;
- (57) Thrust command (when an information source is installed);
- (58) Thrust target (when an information source is installed);
- (59) Fuel quantity in CG trim tank (when an information source is installed);
- (60) Primary Navigation System Reference;
- (61) Icing (when an information source is installed);
- (62) Engine warning each engine vibration (when an information source is installed);
- (63) Engine warning each engine over temp. (when an information source is installed);
- (64) Engine warning each engine oil pressure low (when an information source is installed);
- (65) Engine warning each engine over speed (when an information source is installed);
- (66) Yaw trim surface position;
- (67) Roll trim surface position;
- (68) Brake pressure (selected system);
- (69) Brake pedal application (left and right);
- (70) Yaw or sideslip angle (when an information source is installed);
- (71) Engine bleed valve position (when an information source is installed);
- (72) De-icing or anti-icing system selection (when an information source is installed);
- (73) Computed center of gravity (when an information source is installed);
- (74) AC electrical bus status;
- (75) DC electrical bus status;
- (76) APU bleed valve position (when an information source is installed);
- (77) Hydraulic pressure (each system);
- (78) Loss of cabin pressure;
- (79) Computer failure;
- (80) Heads-up display (when an information source is installed);

- (81) Par-a-visual display (when an information source is installed);
- (82) Cockpit trim control input position-pitch;
- (83) Cockpit trim control input position-roll;
- (84) Cockpit trim control input position-yaw;
- (85) Trailing edge flap and cockpit flap control position;
- (86) Leading edge flap and cockpit flap control position;
- (87) Ground spoiler position and speed brake selection; and
- (88) All cockpit flight control input forces (control wheel, control column, rudder pedal).

[(i) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, manufactured after August 18, 2000—

[(1) The parameters listed in paragraphs (h)(1) through (h)(57) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix F of this part.

[(j) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, that are manufactured after August 19, 2002, the parameters listed in paragraphs (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(k) For airplanes manufactured before August 18, 1997, the following airplane type need not comply with this section: deHavilland DHC-6.]
Docket No. 25530 (53 FR 26151) Eff. 7/1 1/88; (Amdt. 135-26, Eff. 10/1 1/88); [(Amdt. 135-69, Eff. 8/18/97)]

§ 135.153 Ground proximity warning system.

(a) [No person may operate a turbine-powered airplane having a passenger seat configuration of 10 seats or more, excluding any pilot seat, unless it is equipped with an approved ground proximity warning system.]

(b) [Reserved]

- (49) Selected speed (when an information source is installed);
- (50) Selected mach (when an information source is installed);
- (51) Selected vertical speed (when an information source is installed);
- (52) Selected heading (when an information source is installed);
- (53) Selected flight path (when an information source is installed);
- (54) Selected decision height (when an information source is installed);
- (55) EFIS display format;
- (56) Multi-function/engine/alerts display format;
- (57) Thrust command (when an information source is installed);
- (58) Thrust target (when an information source is installed);
- (59) Fuel quantity in CG trim tank (when an information source is installed);
- (60) Primary Navigation System Reference;
- (61) Icing (when an information source is installed);
- (62) Engine warning each engine vibration (when an information source is installed);
- (63) Engine warning each engine over temp. (when an information source is installed);
- (64) Engine warning each engine oil pressure low (when an information source is installed);
- (65) Engine warning each engine over speed (when an information source is installed);
- (66) Yaw trim surface position;
- (67) Roll trim surface position;
- (68) Brake pressure (selected system);
- (69) Brake pedal application (left and right);
- (70) Yaw or sideslip angle (when an information source is installed);
- (71) Engine bleed valve position (when an information source is installed);
- (72) De-icing or anti-icing system selection (when an information source is installed);
- (73) Computed center of gravity (when an information source is installed);
- (74) AC electrical bus status;
- (75) DC electrical bus status;
- (76) APU bleed valve position (when an information source is installed);
- (77) Hydraulic pressure (each system);
- (78) Loss of cabin pressure;
- (79) Computer failure;
- (80) Heads-up display (when an information source is installed);

- (81) Par-a-visual display (when an information source is installed);
- (82) Cockpit trim control input position-pitch;
- (83) Cockpit trim control input position-roll;
- (84) Cockpit trim control input position-yaw;
- (85) Trailing edge flap and cockpit flap control position;
- (86) Leading edge flap and cockpit flap control position;
- (87) Ground spoiler position and speed brake selection; and
- (88) All cockpit flight control input forces (control wheel, control column, rudder pedal).

[(i) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, manufactured after August 18, 2000—

[(1) The parameters listed in paragraphs (h)(1) through (h)(57) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix F of this part.

[(j) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, that are manufactured after August 19, 2002, the parameters listed in paragraphs (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(k) For airplanes manufactured before August 18, 1997, the following airplane type need not comply with this section: deHavilland DHC-6.]
Docket No. 25530 (53 FR 26151) Eff. 7/1 1/88; (Amdt. 135-26, Eff. 10/1 1/88); [(Amdt. 135-69, Eff. 8/18/97)]

§ 135.153 Ground proximity warning system.

(a) [No person may operate a turbine-powered airplane having a passenger seat configuration of 10 seats or more, excluding any pilot seat, unless it is equipped with an approved ground proximity warning system.]

(b) [Reserved]

- (49) Selected speed (when an information source is installed);
- (50) Selected mach (when an information source is installed);
- (51) Selected vertical speed (when an information source is installed);
- (52) Selected heading (when an information source is installed);
- (53) Selected flight path (when an information source is installed);
- (54) Selected decision height (when an information source is installed);
- (55) EFIS display format;
- (56) Multi-function/engine/alerts display format;
- (57) Thrust command (when an information source is installed);
- (58) Thrust target (when an information source is installed);
- (59) Fuel quantity in CG trim tank (when an information source is installed);
- (60) Primary Navigation System Reference;
- (61) Icing (when an information source is installed);
- (62) Engine warning each engine vibration (when an information source is installed);
- (63) Engine warning each engine over temp. (when an information source is installed);
- (64) Engine warning each engine oil pressure low (when an information source is installed);
- (65) Engine warning each engine over speed (when an information source is installed);
- (66) Yaw trim surface position;
- (67) Roll trim surface position;
- (68) Brake pressure (selected system);
- (69) Brake pedal application (left and right);
- (70) Yaw or sideslip angle (when an information source is installed);
- (71) Engine bleed valve position (when an information source is installed);
- (72) De-icing or anti-icing system selection (when an information source is installed);
- (73) Computed center of gravity (when an information source is installed);
- (74) AC electrical bus status;
- (75) DC electrical bus status;
- (76) APU bleed valve position (when an information source is installed);
- (77) Hydraulic pressure (each system);
- (78) Loss of cabin pressure;
- (79) Computer failure;
- (80) Heads-up display (when an information source is installed);

- (81) Para-visual display (when an information source is installed);
- (82) Cockpit trim control input position-pitch;
- (83) Cockpit trim control input position-roll;
- (84) Cockpit trim control input position-yaw;
- (85) Trailing edge flap and cockpit flap control position;
- (86) Leading edge flap and cockpit flap control position;
- (87) Ground spoiler position and speed brake selection; and
- (88) All cockpit flight control input forces (control wheel, control column, rudder pedal).

[(i) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, manufactured after August 18, 2000—

[(1) The parameters listed in paragraphs (h)(1) through (h)(57) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix F of this part.

[(j) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, that are manufactured after August 19, 2002, the parameters listed in paragraphs (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(k) For airplanes manufactured before August 18, 1997, the following airplane type need not comply with this section: deHavilland DHC-6.]
Docket No. 25530 (53 FR 26151) Eff. 7/1 1/88; (Amdt. 135-26, Eff. 10/1 1/88); [(Amdt. 135-69, Eff. 8/18/97)]

§ 135.153 Ground proximity warning system.

(a) [No person may operate a turbine-powered airplane having a passenger seat configuration of 10 seats or more, excluding any pilot seat, unless it is equipped with an approved ground proximity warning system.]

(b) [Reserved]

- (49) Selected speed (when an information source is installed);
- (50) Selected mach (when an information source is installed);
- (51) Selected vertical speed (when an information source is installed);
- (52) Selected heading (when an information source is installed);
- (53) Selected flight path (when an information source is installed);
- (54) Selected decision height (when an information source is installed);
- (55) EFIS display format;
- (56) Multi-function/engine/alerts display format;
- (57) Thrust command (when an information source is installed);
- (58) Thrust target (when an information source is installed);
- (59) Fuel quantity in CG trim tank (when an information source is installed);
- (60) Primary Navigation System Reference;
- (61) Icing (when an information source is installed);
- (62) Engine warning each engine vibration (when an information source is installed);
- (63) Engine warning each engine over temp. (when an information source is installed);
- (64) Engine warning each engine oil pressure low (when an information source is installed);
- (65) Engine warning each engine over speed (when an information source is installed);
- (66) Yaw trim surface position;
- (67) Roll trim surface position;
- (68) Brake pressure (selected system);
- (69) Brake pedal application (left and right);
- (70) Yaw or sideslip angle (when an information source is installed);
- (71) Engine bleed valve position (when an information source is installed);
- (72) De-icing or anti-icing system selection (when an information source is installed);
- (73) Computed center of gravity (when an information source is installed);
- (74) AC electrical bus status;
- (75) DC electrical bus status;
- (76) APU bleed valve position (when an information source is installed);
- (77) Hydraulic pressure (each system);
- (78) Loss of cabin pressure;
- (79) Computer failure;
- (80) Heads-up display (when an information source is installed);

- (81) Para-visual display (when an information source is installed);
- (82) Cockpit trim control input position-pitch;
- (83) Cockpit trim control input position-roll;
- (84) Cockpit trim control input position-yaw;
- (85) Trailing edge flap and cockpit flap control position;
- (86) Leading edge flap and cockpit flap control position;
- (87) Ground spoiler position and speed brake selection; and
- (88) All cockpit flight control input forces (control wheel, control column, rudder pedal).

[(i) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, manufactured after August 18, 2000—

[(1) The parameters listed in paragraphs (h)(1) through (h)(57) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(2) Commensurate with the capacity of the recording system, all additional parameters for which information sources are installed and which are connected to the recording system must be recorded within the ranges, accuracies, resolutions, and sampling intervals specified in Appendix F of this part.

[(j) For all turbine-engine-powered airplanes with a seating configuration, excluding any required crewmember seat, of 10 to 30 passenger seats, that are manufactured after August 19, 2002, the parameters listed in paragraphs (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix F of this part.

[(k) For airplanes manufactured before August 18, 1997, the following airplane type need not comply with this section: deHavilland DHC-6.]
Docket No. 25530 (53 FR 26151) Eff. 7/1 1/88; (Amdt. 135-26, Eff. 10/1 1/88); [(Amdt. 135-69, Eff. 8/18/97)]

§ 135.153 Ground proximity warning system.

(a) [No person may operate a turbine-powered airplane having a passenger seat configuration of 10 seats or more, excluding any pilot seat, unless it is equipped with an approved ground proximity warning system.]

(b) [Reserved]

(b) No person may operate a reciprocating-engine or turbopropeller-powered small airplane that has a passenger seating configuration, excluding pilot seats, of 10 seats or more unless it is type certificated-

(1) In the transport category;

(2) Before July 1, 1970, in the normal category and meets special conditions issued by the Administrator for airplanes intended for use in operations under this part;

(3) Before July 19, 1970, in the normal category and meets the additional airworthiness standards in Special Federal Aviation Regulation No. 23;

(4) In the normal category and meets the additional airworthiness standards in appendix A;

(5) In the normal category and complies with section 1.(a) of Special Federal Aviation Regulation No. 41;

(6) In the normal category and complies with section 1.(b) of Special Federal Aviation Regulation No. 41; or

(7) In the commuter category.

(c) No person may operate a small airplane with a passenger seating configuration, excluding any pilot seat, of 10 seats or more, with a seating configuration greater than the maximum seating configuration used in that type airplane in operations under this part before August 19, 1977. This paragraph does not apply to-

(1) An airplane that is type certificated in the transport category; or

(2) An airplane that complies with-

(i) Appendix A of this part provided that its passenger seating configuration, excluding pilot seats, does not exceed 19 seats; or

(ii) Special Federal Aviation Regulation No. 41.

(d) Cargo or baggage compartments:

(1) After March 20, 1991, each Class C or D compartment, as defined in § 25.857 of part 25 of this chapter, greater than 200 cubic feet in volume in a transport category airplane type certificated after January 1, 1958, must have ceiling and sidewall panels which are constructed of:

(i) Glass fiber reinforced resin;

(ii) Materials which meet the test requirements of part 25, appendix F, part III of this chapter; or

(iii) In the case of liner installations approved prior to March 20, 1989, aluminum.

(2) For compliance with this paragraph, the term 'liner' includes any design feature, such

as a joint or fastener, which would affect the capability of the liner to safely contain a fire.

(Amdt. 135-2, Eff. 10/17/79); (Amdt. 135-21, Eff. 2/17/87); (Amdt. 135-31, Eff. 3/20/89); [(Amdt. 135-55, Eff. 3/6/95)]

§ 135.170 Materials for compartment interiors.

[(a) No person may operate an airplane that conforms to an amended or supplemental type certificate issued in accordance with SFAR No. 41 for a maximum certificated takeoff weight in excess of 12,500 pounds unless within one year after issuance of the initial airworthiness certificate under that SFAR, the airplane meets the compartment interior requirements set forth in § 25.853(a) in effect March 6, 1995 (formerly § 25.853(a), (b), (b-1), (b-2), and (b-3) of this chapter in effect on September 26, 1978).]

(b) [Except for commuter category airplanes and airplanes certificated under Special Federal Aviation Regulation No. 41, no person may operate a large airplane unless it meets the following additional airworthiness requirements:] *

[(1) Except for those materials covered by paragraph (b)(2) of this section, all materials in each compartment used by the crewmembers or passengers must meet the requirements of § 25.853 of this chapter in effect as follows or later amendment thereto:

[(i) Except as provided in paragraph (b)(1)(iv) of this section, each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1988, but prior to August 20, 1990, must comply with the heat release rate testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on August 20, 1986), except that the total heat release over the first 2 minutes of sample exposure rate must not exceed 100 kilowatt minutes per square meter and the peak heat release rate must not exceed 100 kilowatts per square meter.

[(ii) Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on September 26, 1988).

[(iii) Except as provided in paragraph (b)(1)(v) or (vi) of this section, each airplane for which the application for type certificate was filed prior to May 1, 1972, must comply

(b) No person may operate a reciprocating-engine or turbopropeller-powered small airplane that has a passenger seating configuration, excluding pilot seats, of 10 seats or more unless it is type certificated-

(1) In the transport category;

(2) Before July 1, 1970, in the normal category and meets special conditions issued by the Administrator for airplanes intended for use in operations under this part;

(3) Before July 19, 1970, in the normal category and meets the additional airworthiness standards in Special Federal Aviation Regulation No. 23;

(4) In the normal category and meets the additional airworthiness standards in appendix A;

(5) In the normal category and complies with section 1.(a) of Special Federal Aviation Regulation No. 41;

(6) In the normal category and complies with section 1.(b) of Special Federal Aviation Regulation No. 41; or

(7) In the commuter category.

(c) No person may operate a small airplane with a passenger seating configuration, excluding any pilot seat, of 10 seats or more, with a seating configuration greater than the maximum seating configuration used in that type airplane in operations under this part before August 19, 1977. This paragraph does not apply to-

(1) An airplane that is type certificated in the transport category; or

(2) An airplane that complies with-

(i) Appendix A of this part provided that its passenger seating configuration, excluding pilot seats, does not exceed 19 seats; or

(ii) Special Federal Aviation Regulation No. 41.

(d) Cargo or baggage compartments:

(1) After March 20, 1991, each Class C or D compartment, as defined in § 25.857 of part 25 of this chapter, greater than 200 cubic feet in volume in a transport category airplane type certificated after January 1, 1958, must have ceiling and sidewall panels which are constructed of:

(i) Glass fiber reinforced resin;

(ii) Materials which meet the test requirements of part 25, appendix F, part III of this chapter; or

(iii) In the case of liner installations approved prior to March 20, 1989, aluminum.

(2) For compliance with this paragraph, the term 'liner' includes any design feature, such

as a joint or fastener, which would affect the capability of the liner to safely contain a fire.

(Amdt. 135-2, Eff. 10/17/79); (Amdt. 135-21, Eff. 2/17/87); (Amdt. 135-31, Eff. 3/20/89); [(Amdt. 135-55, Eff. 3/6/95)]

§ 135.170 Materials for compartment interiors.

[(a) No person may operate an airplane that conforms to an amended or supplemental type certificate issued in accordance with SFAR No. 41 for a maximum certificated takeoff weight in excess of 12,500 pounds unless within one year after issuance of the initial airworthiness certificate under that SFAR, the airplane meets the compartment interior requirements set forth in § 25.853(a) in effect March 6, 1995 (formerly § 25.853(a), (b), (b-1), (b-2), and (b-3) of this chapter in effect on September 26, 1978).]

(b) [Except for commuter category airplanes and airplanes certificated under Special Federal Aviation Regulation No. 41, no person may operate a large airplane unless it meets the following additional airworthiness requirements:] *

[(1) Except for those materials covered by paragraph (b)(2) of this section, all materials in each compartment used by the crewmembers or passengers must meet the requirements of § 25.853 of this chapter in effect as follows or later amendment thereto:

[(i) Except as provided in paragraph (b)(1)(iv) of this section, each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1988, but prior to August 20, 1990, must comply with the heat release rate testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on August 20, 1986), except that the total heat release over the first 2 minutes of sample exposure rate must not exceed 100 kilowatt minutes per square meter and the peak heat release rate must not exceed 100 kilowatts per square meter.

[(ii) Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on September 26, 1988).

[(iii) Except as provided in paragraph (b)(1)(v) or (vi) of this section, each airplane for which the application for type certificate was filed prior to May 1, 1972, must comply

(b) No person may operate a reciprocating-engine or turbopropeller-powered small airplane that has a passenger seating configuration, excluding pilot seats, of 10 seats or more unless it is type certificated-

(1) In the transport category;

(2) Before July 1, 1970, in the normal category and meets special conditions issued by the Administrator for airplanes intended for use in operations under this part;

(3) Before July 19, 1970, in the normal category and meets the additional airworthiness standards in Special Federal Aviation Regulation No. 23;

(4) In the normal category and meets the additional airworthiness standards in appendix A;

(5) In the normal category and complies with section 1.(a) of Special Federal Aviation Regulation No. 41;

(6) In the normal category and complies with section 1.(b) of Special Federal Aviation Regulation No. 41; or

(7) In the commuter category.

(c) No person may operate a small airplane with a passenger seating configuration, excluding any pilot seat, of 10 seats or more, with a seating configuration greater than the maximum seating configuration used in that type airplane in operations under this part before August 19, 1977. This paragraph does not apply to-

(1) An airplane that is type certificated in the transport category; or

(2) An airplane that complies with-

(i) Appendix A of this part provided that its passenger seating configuration, excluding pilot seats, does not exceed 19 seats; or

(ii) Special Federal Aviation Regulation No. 41.

(d) Cargo or baggage compartments:

(1) After March 20, 1991, each Class C or D compartment, as defined in § 25.857 of part 25 of this chapter, greater than 200 cubic feet in volume in a transport category airplane type certificated after January 1, 1958, must have ceiling and sidewall panels which are constructed of:

(i) Glass fiber reinforced resin;

(ii) Materials which meet the test requirements of part 25, appendix F, part III of this chapter; or

(iii) In the case of liner installations approved prior to March 20, 1989, aluminum.

(2) For compliance with this paragraph, the term 'liner' includes any design feature, such

as a joint or fastener, which would affect the capability of the liner to safely contain a fire.

(Amdt. 135-2, Eff. 10/17/79); (Amdt. 135-21, Eff. 2/17/87); (Amdt. 135-31, Eff. 3/20/89); [(Amdt. 135-55, Eff. 3/6/95)]

§ 135.170 Materials for compartment interiors.

[(a) No person may operate an airplane that conforms to an amended or supplemental type certificate issued in accordance with SFAR No. 41 for a maximum certificated takeoff weight in excess of 12,500 pounds unless within one year after issuance of the initial airworthiness certificate under that SFAR, the airplane meets the compartment interior requirements set forth in § 25.853(a) in effect March 6, 1995 (formerly § 25.853(a), (b), (b-1), (b-2), and (b-3) of this chapter in effect on September 26, 1978).]

(b) [Except for commuter category airplanes and airplanes certificated under Special Federal Aviation Regulation No. 41, no person may operate a large airplane unless it meets the following additional airworthiness requirements:] *

[(1) Except for those materials covered by paragraph (b)(2) of this section, all materials in each compartment used by the crewmembers or passengers must meet the requirements of § 25.853 of this chapter in effect as follows or later amendment thereto:

[(i) Except as provided in paragraph (b)(1)(iv) of this section, each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1988, but prior to August 20, 1990, must comply with the heat release rate testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on August 20, 1986), except that the total heat release over the first 2 minutes of sample exposure rate must not exceed 100 kilowatt minutes per square meter and the peak heat release rate must not exceed 100 kilowatts per square meter.

[(ii) Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on September 26, 1988).

[(iii) Except as provided in paragraph (b)(1)(v) or (vi) of this section, each airplane for which the application for type certificate was filed prior to May 1, 1972, must comply

(b) No person may operate a reciprocating-engine or turbopropeller-powered small airplane that has a passenger seating configuration, excluding pilot seats, of 10 seats or more unless it is type certificated-

(1) In the transport category;

(2) Before July 1, 1970, in the normal category and meets special conditions issued by the Administrator for airplanes intended for use in operations under this part;

(3) Before July 19, 1970, in the normal category and meets the additional airworthiness standards in Special Federal Aviation Regulation No. 23;

(4) In the normal category and meets the additional airworthiness standards in appendix A;

(5) In the normal category and complies with section 1.(a) of Special Federal Aviation Regulation No. 41;

(6) In the normal category and complies with section 1.(b) of Special Federal Aviation Regulation No. 41; or

(7) In the commuter category.

(c) No person may operate a small airplane with a passenger seating configuration, excluding any pilot seat, of 10 seats or more, with a seating configuration greater than the maximum seating configuration used in that type airplane in operations under this part before August 19, 1977. This paragraph does not apply to-

(1) An airplane that is type certificated in the transport category; or

(2) An airplane that complies with-

(i) Appendix A of this part provided that its passenger seating configuration, excluding pilot seats, does not exceed 19 seats; or

(ii) Special Federal Aviation Regulation No. 41.

(d) Cargo or baggage compartments:

(1) After March 20, 1991, each Class C or D compartment, as defined in § 25.857 of part 25 of this chapter, greater than 200 cubic feet in volume in a transport category airplane type certificated after January 1, 1958, must have ceiling and sidewall panels which are constructed of:

(i) Glass fiber reinforced resin;

(ii) Materials which meet the test requirements of part 25, appendix F, part III of this chapter; or

(iii) In the case of liner installations approved prior to March 20, 1989, aluminum.

(2) For compliance with this paragraph, the term 'liner' includes any design feature, such

as a joint or fastener, which would affect the capability of the liner to safely contain a fire.

(Amdt. 135-2, Eff. 10/17/79); (Amdt. 135-21, Eff. 2/17/87); (Amdt. 135-31, Eff. 3/20/89); [(Amdt. 135-55, Eff. 3/6/95)]

§ 135.170 Materials for compartment interiors.

[(a) No person may operate an airplane that conforms to an amended or supplemental type certificate issued in accordance with SFAR No. 41 for a maximum certificated takeoff weight in excess of 12,500 pounds unless within one year after issuance of the initial airworthiness certificate under that SFAR, the airplane meets the compartment interior requirements set forth in § 25.853(a) in effect March 6, 1995 (formerly § 25.853(a), (b), (b-1), (b-2), and (b-3) of this chapter in effect on September 26, 1978).]

(b) [Except for commuter category airplanes and airplanes certificated under Special Federal Aviation Regulation No. 41, no person may operate a large airplane unless it meets the following additional airworthiness requirements:] *

[(1) Except for those materials covered by paragraph (b)(2) of this section, all materials in each compartment used by the crewmembers or passengers must meet the requirements of § 25.853 of this chapter in effect as follows or later amendment thereto:

[(i) Except as provided in paragraph (b)(1)(iv) of this section, each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1988, but prior to August 20, 1990, must comply with the heat release rate testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on August 20, 1986), except that the total heat release over the first 2 minutes of sample exposure rate must not exceed 100 kilowatt minutes per square meter and the peak heat release rate must not exceed 100 kilowatts per square meter.

[(ii) Each airplane with a passenger capacity of 20 or more and manufactured after August 19, 1990, must comply with the heat release rate and smoke testing provisions of § 25.853(d) in effect March 6, 1995 (formerly § 25.853(a-1) in effect on September 26, 1988).

[(iii) Except as provided in paragraph (b)(1)(v) or (vi) of this section, each airplane for which the application for type certificate was filed prior to May 1, 1972, must comply

manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

[(c) **Lighting for interior emergency exit markings.** Each passenger-carrying airplane must have an emergency lighting system, independent of the main lighting system; however, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system **must**—

[(1) Illuminate each passenger exit marking and locating sign;

[(2) Provide enough general lighting in the passenger cabin so that the average illumination when measured at **40-inch** intervals at seat arm-rest height, on the centerline of the main passenger aisle, is at least 0.05 foot-candles; and

[(3) For airplanes type certificated after January 1, 1958, include floor proximity emergency escape path marking which meets the requirements of § 25.8 12(e) of this chapter in effect on November 26, 1984.

[(d) **Emergency light operation.** Except for lights forming part of emergency lighting subsystems provided in compliance with § 25.8 12(h) of this chapter (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the airplane's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) of this section must:

[(1) Be operable manually both from the flightcrew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

[(2) Have a means to prevent inadvertent operation of the manual controls;

[(3) When armed or turned on at either station, remain lighted or become lighted upon interruption of the airplane's normal electric power;

[(4) Be armed or turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph, a transverse vertical separation of the fuselage need not be considered;

[(5) Provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing; and

[(6) Have a cockpit control device that has an "on," "off," and "armed" position.

[(e) **Emergency exit operating handles.**

[(1) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by—

[(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70° of arc at a radius approximately equal to three-fourths of the handle length; and

[(ii) The word "open" in red letters 1 inch high placed horizontally near the head of the arrow.

[(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

[(f) **Emergency exit access.** Access to emergency exits must be provided as follows for each passenger-carrying airplane:

[(1) Each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

[(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f)(1) of this section; however, the Administrator may authorize deviation from this requirement for an airplane certificated under the provisions of part 4b of the Civil Air Regulations in effect before December 20, 1951, if he finds that special circumstances exist that provide an equivalent level of safety.

[(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness

manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

[(c) *Lighting for interior emergency exit markings.* Each passenger-carrying airplane must have an emergency lighting system, independent of the main lighting system; however, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system **must**—

[(1) Illuminate each passenger exit marking and locating sign;

[(2) Provide enough general lighting in the passenger cabin so that the average illumination when measured at 40-inch intervals at seat arm-rest height, on the centerline of the main passenger aisle, is at least 0.05 foot-candles; and

[(3) For airplanes type certificated after January 1, 1958, include floor proximity emergency escape path marking which meets the requirements of § 25.8 12(e) of this chapter in effect on November 26, 1984.

[(d) *Emergency light operation.* Except for lights forming part of emergency lighting subsystems provided in compliance with § 25.8 12(h) of this chapter (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the airplane's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) of this section must:

[(1) Be operable manually both from the flightcrew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

[(2) Have a means to prevent inadvertent operation of the manual controls;

[(3) When armed or turned on at either station, remain lighted or become lighted upon interruption of the airplane's normal electric power;

[(4) Be armed or turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph, a transverse vertical separation of the fuselage need not be considered;

[(5) Provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing; and

[(6) Have a cockpit control device that has an "on," "off," and "armed" position.

[(e) *Emergency exit operating handles.*

[(1) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by—

[(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70° of arc at a radius approximately equal to three-fourths of the handle length; and

[(ii) The word "open" in red letters 1 inch high placed horizontally near the head of the arrow.

[(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

[(f) *Emergency exit access.* Access to emergency exits must be provided as follows for each passenger-carrying airplane:

[(1) Each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

[(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f)(1) of this section; however, the Administrator may authorize deviation from this requirement for an airplane certificated under the provisions of part 4b of the Civil Air Regulations in effect before December 20, 1951, if he finds that special circumstances exist that provide an equivalent level of safety.

[(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness

manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

[(c) *Lighting for interior emergency exit markings.* Each passenger-carrying airplane must have an emergency lighting system, independent of the main lighting system; however, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system **must**—

[(1) Illuminate each passenger exit marking and locating sign;

[(2) Provide enough general lighting in the passenger cabin so that the average illumination when measured at 40-inch intervals at seat arm-rest height, on the centerline of the main passenger aisle, is at least 0.05 foot-candles; and

[(3) For airplanes type certificated after January 1, 1958, include floor proximity emergency escape path marking which meets the requirements of § 25.8 12(e) of this chapter in effect on November 26, 1984.

[(d) *Emergency light operation.* Except for lights forming part of emergency lighting subsystems provided in compliance with § 25.8 12(h) of this chapter (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the airplane's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) of this section must:

[(1) Be operable manually both from the flightcrew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

[(2) Have a means to prevent inadvertent operation of the manual controls;

[(3) When armed or turned on at either station, remain lighted or become lighted upon interruption of the airplane's normal electric power;

[(4) Be armed or turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph, a transverse vertical separation of the fuselage need not be considered;

[(5) Provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing; and

[(6) Have a cockpit control device that has an "on," "off," and "armed" position.

[(e) *Emergency exit operating handles.*

[(1) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by—

[(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70° of arc at a radius approximately equal to three-fourths of the handle length; and

[(ii) The word "open" in red letters 1 inch high placed horizontally near the head of the arrow.

[(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

[(f) *Emergency exit access.* Access to emergency exits must be provided as follows for each passenger-carrying airplane:

[(1) Each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

[(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f)(1) of this section; however, the Administrator may authorize deviation from this requirement for an airplane certificated under the provisions of part 4b of the Civil Air Regulations in effect before December 20, 1951, if he finds that special circumstances exist that provide an equivalent level of safety.

[(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness

manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

[(c) *Lighting for interior emergency exit markings.* Each passenger-carrying airplane must have an emergency lighting system, independent of the main lighting system; however, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system **must**—

[(1) Illuminate each passenger exit marking and locating sign;

[(2) Provide enough general lighting in the passenger cabin so that the average illumination when measured at 40-inch intervals at seat arm-rest height, on the centerline of the main passenger aisle, is at least 0.05 foot-candles; and

[(3) For airplanes type certificated after January 1, 1958, include floor proximity emergency escape path marking which meets the requirements of § 25.8 12(e) of this chapter in effect on November 26, 1984.

[(d) *Emergency light operation.* Except for lights forming part of emergency lighting subsystems provided in compliance with § 25.8 12(h) of this chapter (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the airplane's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) of this section must:

[(1) Be operable manually both from the flightcrew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

[(2) Have a means to prevent inadvertent operation of the manual controls;

[(3) When armed or turned on at either station, remain lighted or become lighted upon interruption of the airplane's normal electric power;

[(4) Be armed or turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph, a transverse vertical separation of the fuselage need not be considered;

[(5) Provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing; and

[(6) Have a cockpit control device that has an "on," "off," and "armed" position.

[(e) *Emergency exit operating handles.*

[(1) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by—

[(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70° of arc at a radius approximately equal to three-fourths of the handle length; and

[(ii) The word "open" in red letters 1 inch high placed horizontally near the head of the arrow.

[(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

[(f) *Emergency exit access.* Access to emergency exits must be provided as follows for each passenger-carrying airplane:

[(1) Each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

[(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f)(1) of this section; however, the Administrator may authorize deviation from this requirement for an airplane certificated under the provisions of part 4b of the Civil Air Regulations in effect before December 20, 1951, if he finds that special circumstances exist that provide an equivalent level of safety.

[(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness

manufactured to meet the interior emergency exit marking requirements under which the airplane was type certificated. On these airplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 250 microlamberts.

[(c) *Lighting for interior emergency exit markings.* Each passenger-carrying airplane must have an emergency lighting system, independent of the main lighting system; however, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system **must**—

[(1) Illuminate each passenger exit marking and locating sign;

[(2) Provide enough general lighting in the passenger cabin so that the average illumination when measured at 40-inch intervals at seat arm-rest height, on the centerline of the main passenger aisle, is at least 0.05 foot-candles; and

[(3) For airplanes type certificated after January 1, 1958, include floor proximity emergency escape path marking which meets the requirements of § 25.8 12(e) of this chapter in effect on November 26, 1984.

[(d) *Emergency light operation.* Except for lights forming part of emergency lighting subsystems provided in compliance with § 25.8 12(h) of this chapter (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the airplane's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) of this section must:

[(1) Be operable manually both from the flightcrew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

[(2) Have a means to prevent inadvertent operation of the manual controls;

[(3) When armed or turned on at either station, remain lighted or become lighted upon interruption of the airplane's normal electric power;

[(4) Be armed or turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph, a transverse vertical separation of the fuselage need not be considered;

[(5) Provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing; and

[(6) Have a cockpit control device that has an "on," "off," and "armed" position.

[(e) *Emergency exit operating handles.*

[(1) For a passenger-carrying airplane for which the application for the type certificate was filed prior to May 1, 1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by—

[(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70° of arc at a radius approximately equal to three-fourths of the handle length; and

[(ii) The word "open" in red letters 1 inch high placed horizontally near the head of the arrow.

[(2) For a passenger-carrying airplane for which the application for the type certificate was filed on or after May 1, 1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the airplane was type certificated. On these airplanes, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 microlamberts.

[(f) *Emergency exit access.* Access to emergency exits must be provided as follows for each passenger-carrying airplane:

[(1) Each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide.

[(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f)(1) of this section; however, the Administrator may authorize deviation from this requirement for an airplane certificated under the provisions of part 4b of the Civil Air Regulations in effect before December 20, 1951, if he finds that special circumstances exist that provide an equivalent level of safety.

[(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness

(16) Aircraft components or systems that result in taking emergency actions during flight (except action to shut-down an engine).

(b) For the purpose of this section, “during flight” means the period from the moment the aircraft leaves the surface of the earth on takeoff until it touches down on landing.

(c) In addition to the reports required by paragraph (a) of this section, each certificate holder shall report any other failure, malfunction, or defect in an aircraft that occurs or is detected at any time if, in its opinion, the failure, malfunction, or defect has endangered or may endanger the safe operation of the aircraft.

(d) Each certificate holder shall send each report required by this section, in writing, covering each 24-hour period beginning at 0900 hours local time of each day and ending at 0900 hours local time on the next day to the FAA Flight Standards District Office charged with the overall inspection of the certificate holder. Each report of occurrences during a 24-hour period must be mailed or delivered to that office within the next 72 hours. However, a report that is due on Saturday or Sunday may be mailed or delivered on the following Monday and one that is due on a holiday may be mailed or delivered on the next work day. For aircraft operated in areas where mail is not collected, reports may be mailed or delivered within 72 hours after the aircraft returns to a point where the mail is collected.

(e) The certificate holder shall transmit the reports required by this section on a form and in a manner prescribed by the Administrator, and shall include as much of the following as is available:

(1) The type and identification number of the aircraft.

(2) The name of the operator.

(3) The date.

(4) The nature of the failure, malfunction, or defect.

(5) Identification of the part and system involved, including available information pertaining to type designation of the major component and time since last overhaul, if known.

(6) Apparent cause of the failure, malfunction or defect (e.g., wear, crack, design deficiency, or personnel error).

(7) Other pertinent information necessary for more complete identification, determination of seriousness, or corrective action.

(f) A certificate holder that is also the holder of a type certificate (including a supplemental type certificate), a Parts Manufacturer Approval, or a

Technical Standard Order Authorization, or that is the licensee of a type certificate need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it under § 21.3 or § 37.17 of this chapter or under the accident reporting provisions of part 830 of the regulations of the National Transportation Safety Board.

(g) No person may withhold a report required by this section even though all information required by this section is not available.

(h) When the certificate holder gets additional information, including information from the manufacturer or other agency, concerning a report required by this section, it shall expeditiously submit it as a supplement to the first report and reference the date and place of submission of the first report.

§ 135.417 Mechanical interruption summary report.

Each certificate holder shall mail or deliver, before the end of the 10th day of the following month, a summary report of the following occurrences in multiengine aircraft for the preceding month to the [certificate-holding district office:]

(a) Each interruption to a flight, unscheduled change of aircraft en route, or unscheduled stop or diversion from a route, caused by known or suspected mechanical difficulties or malfunctions that are not required to be reported under § 135.4 15.

(b) The number of propeller featherings in flight, listed by type of propeller and engine and aircraft on which it was installed. Propeller featherings for training, demonstration, or flight check purposes need not be reported.

[(Amdt. 135-60, Eff. 2/26/96)]

§ 135.419 Approved aircraft inspection program.

(a) Whenever the Administrator finds that the aircraft inspections required or allowed under part 91 of this chapter are not adequate to meet this part, or upon application by a certificate holder, the Administrator may amend the certificate holder's operations specifications under § 135.17, to require or allow an approved aircraft inspection program for any make and model aircraft of which the certificate holder has the exclusive use of at least one aircraft (as defined in § 135.25(b)).

(b) A certificate holder who applies for an amendment of its operations specifications to allow an approved aircraft inspection program must sub-

(16) Aircraft components or systems that result in taking emergency actions during flight (except action to shut-down an engine).

(b) For the purpose of this section, “during flight” means the period from the moment the aircraft leaves the surface of the earth on takeoff until it touches down on landing.

(c) In addition to the reports required by paragraph (a) of this section, each certificate holder shall report any other failure, malfunction, or defect in an aircraft that occurs or is detected at any time if, in its opinion, the failure, malfunction, or defect has endangered or may endanger the safe operation of the aircraft.

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(e) The certificate holder shall transmit the reports required by this section on a form and in a manner prescribed by the Administrator, and shall include as much of the following as is available:

(1) The type and identification number of the aircraft.

(2) The name of the operator.

(3) The date.

(4) The nature of the failure, malfunction, or defect.

(5) Identification of the part and system involved, including available information pertaining to type designation of the major component and time since last overhaul, if known.

(6) Apparent cause of the failure, malfunction or defect (e.g., wear, crack, design deficiency, or personnel error).

(7) Other pertinent information necessary for more complete identification, determination of seriousness, or corrective action.

(f) A certificate holder that is also the holder of a type certificate (including a supplemental type certificate), a Parts Manufacturer Approval, or a

Technical Standard Order Authorization, or that is the licensee of a type certificate need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it under § 21.3 or § 37.17 of this chapter or under the accident reporting provisions of part 830 of the regulations of the National Transportation Safety Board.

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[(Amdt. 135-66, Eff. 3/12/97)]

§ 135.429 Required inspection personnel.

(a) No person may use any person to perform required inspections unless the person performing the inspection is appropriately certificated, properly trained, qualified, and authorized to do so.

(b) No person may allow any person to perform a required inspection unless, at the time, the person performing that inspection is under the supervision and control of an inspection unit.

(c) No person may perform a required inspection if that person performed the item of work to be inspected.

(d) In the case of rotorcraft that operate in remote areas or sites, the Administrator may approve procedures for the performance of required inspection items by a pilot when no other qualified person is available, provided-

(1) The pilot is employed by the certificate holder;

(2) It can be shown to the satisfaction of the Administrator that each pilot authorized to perform required inspections is properly trained and qualified;

(3) The required inspection is a result of a mechanical interruption and is not a part of a certificate holder's continuous airworthiness maintenance program;

(4) Each item is inspected after each flight until the item has been inspected by an appropriately certificated mechanic other than the one who originally performed the item of work; and

(5) Each item of work that is a required inspection item that is part of the flight control system shall be flight tested and reinspected before the aircraft is approved for return to service.

(e) Each certificate holder shall maintain, or shall determine that each person with whom it arranges to perform its required inspections maintains, a current listing of persons who have been trained, qualified, and authorized to conduct required inspections. The persons must be identified by name, occupational title and the inspections that they are authorized to perform. The certificate holder (or person with whom it arranges to perform its required inspections) shall give written information to each person so authorized, describing the extent of that person's responsibilities, authorities, and inspectional

limitations. The list shall be made available for inspection by the Administrator upon request.

(Amdt. 135-20, Eff. 1/6/87)

§ 135.431 Continuing analysis and surveillance.

(a) Each certificate holder shall establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventive maintenance, and alterations and for the correction of any deficiency in those programs, regardless of whether those programs are carried out by the certificate holder or by another person.

(b) Whenever the Administrator finds that either or both of the programs described in paragraph (a) of this section does not contain adequate procedures and standards to meet this part, the certificate holder shall, after notification by the Administrator, make changes in those programs requested by the Administrator.

(c) A certificate holder may petition the Administrator to reconsider the notice to make a change in a program. The petition must be filed with the [certificate-holding district office] within 30 days after the certificate holder receives the notice. Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Administrator.

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§ 135.433 Maintenance and preventive maintenance training program.

Each certificate holder or a person performing maintenance or preventive maintenance functions for it shall have a training program to ensure that each person (including inspection personnel) who determines the adequacy of work done is fully informed about procedures and techniques and new equipment in use and is competent to perform that person's duties.

§ 135.435 Certificate requirements.

(a) Except for maintenance, preventive maintenance, alterations, and required inspections performed by repair stations certificated under the provisions of subpart C of part 145 of this chapter, each person who is directly in charge of maintenance, preventive maintenance, or alterations, and each person performing required inspections must hold an appropriate airman certificate.

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(e) Each certificate holder shall maintain, or shall determine that each person with whom it arranges to perform its required inspections maintains, a current listing of persons who have been trained, qualified, and authorized to conduct required inspections. The persons must be identified by name, occupational title and the inspections that they are authorized to perform. The certificate holder (or person with whom it arranges to perform its required inspections) shall give written information to each person so authorized, describing the extent of that person's responsibilities, authorities, and inspectional

limitations. The list shall be made available for inspection by the Administrator upon request.

(Amdt. 135-20, Eff. 1/6/87)

§ 135.431 Continuing analysis and surveillance.

(a) Each certificate holder shall establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventive maintenance, and alterations and for the correction of any deficiency in those programs, regardless of whether those programs are carried out by the certificate holder or by another person.

(b) Whenever the Administrator finds that either or both of the programs described in paragraph (a) of this section does not contain adequate procedures and standards to meet this part, the certificate holder shall, after notification by the Administrator, make changes in those programs requested by the Administrator.

(c) A certificate holder may petition the Administrator to reconsider the notice to make a change in a program. The petition must be filed with the [certificate-holding district office] within 30 days after the certificate holder receives the notice. Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Administrator.

[(Amdt. 135-60, Eff. 2/26/96)]

§ 135.433 Maintenance and preventive maintenance training program.

Each certificate holder or a person performing maintenance or preventive maintenance functions for it shall have a training program to ensure that each person (including inspection personnel) who determines the adequacy of work done is fully informed about procedures and techniques and new equipment in use and is competent to perform that person's duties.

§ 135.435 Certificate requirements.

(a) Except for maintenance, preventive maintenance, alterations, and required inspections performed by repair stations certificated under the provisions of subpart C of part 145 of this chapter, each person who is directly in charge of maintenance, preventive maintenance, or alterations, and each person performing required inspections must hold an appropriate airman certificate.

acceptable to the Administrator, that is retrievable in the English language.]

[(Amdt. 135-66, Eff. 3/12/97)]

§ 135.429 Required inspection personnel.

(a) No person may use any person to perform required inspections unless the person performing the inspection is appropriately certificated, properly trained, qualified, and authorized to do so.

(b) No person may allow any person to perform a required inspection unless, at the time, the person performing that inspection is under the supervision and control of an inspection unit.

(c) No person may perform a required inspection if that person performed the item of work to be inspected.

(d) In the case of rotorcraft that operate in remote areas or sites, the Administrator may approve procedures for the performance of required inspection items by a pilot when no other qualified person is available, provided-

(1) The pilot is employed by the certificate holder;

(2) It can be shown to the satisfaction of the Administrator that each pilot authorized to perform required inspections is properly trained and qualified;

(3) The required inspection is a result of a mechanical interruption and is not a part of a certificate holder's continuous airworthiness maintenance program;

(4) Each item is inspected after each flight until the item has been inspected by an appropriately certificated mechanic other than the one who originally performed the item of work; and

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U.S. Department
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**Federal Aviation
Administration**

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